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ABSTRACT

New economic strategies used by states are described, and case studies of the recent innovations in economic development policies of Massachusetts, Pennsylvania, and Michigan are presented. A number of programs in other states are briefly reviewed, and various models of state intervention are evaluated, along with the principles that underlie successful programs. Some questions raised by the economic activism of U.S. governors and state legislators are addressed. Lessons from the recent experimentation in state economic development policy are considered, along with the implications for federal policy of this expansion of state government's role in the economy. Appended are a glossary of acronyms and a chart that specifies types of competitiveness programs used in these three states. Specific programs are identified under the following categories: programs to stimulate technological innovation, capital programs, programs to help new and small businesses, technology transfer programs, labor-management cooperation programs, education and training programs, export programs, programs to bring the poor into the growth process, and the principles of effective economic development. (SW)

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ECONOMIC COMPETITIVENESS

The States Take the Lead

by David Osborne

Introduction by
Robert B. Reich

Economic Policy Institute

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David Osborne is the author of the forthcoming book, *The Next Agenda: Lessons from the Laboratories of Democracy*, from which this report was taken. The book will be published in April 1988 by Harvard Business School Press. Osborne is also the author of numerous articles which have appeared in *The Atlantic*, *The New Republic*, *The New York Times Magazine*, *Mother Jones*, and *Inc. Magazine*, among others.

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INTRODUCTION

by Robert B. Reich

The American economy is in transition. High-volume, standardized production of everything from wheat to steel is shifting to developing nations with access to the same equipment as advanced nations, but whose costs of labor and materials are substantially lower. At the same time, consumers within advanced nations are demanding more customized and technologically-sophisticated products and services. Our future standard of living thus depends on the speed and ease with which we move from mass production to knowledge production, and how many of our fellow citizens we bring along.

But this transition has proven difficult for many Americans. While over 15 million new jobs have been created during the last five years, the vast majority are in low-skilled service industries paying only modest wages. While the American economy has expanded and productivity has gained slightly, average real earnings have stagnated. More troubling still, we are living off our borrowings from the rest of the world. Were foreigners to stop their lending or the dollar to continue to fall relative to foreign currencies, our standard of living would drop. Simply to pay back what we owe will require major sacrifice.

The underlying difficulty has persisted throughout the last fifteen years, regardless of inflation or recession, high dollars or low dollars, Democratic or Republican administrations, large government budget deficits or smaller ones. The American standard of living has failed to rise from what it was in 1973. In some respects it has fallen: most families now need two wage-earners to support themselves; average family size continues to shrink.

The transition from a mass-production to a knowledge economy has been difficult, in part, because the latter rests upon fundamentally different premises about growth and investment, and the organization of production. High-volume, mass production required heavy investments in plant and equipment and relatively small investments in the skills and technological competences of the workforce. Growth depended on economies of scale. The organization of production was hierarchical, involving a few people engaged in strategic planning at the top, and many people following orders at the bottom.

The economy toward which we are evolving, by contrast, requires substantial investments in workers' skills. Growth depends on continuous, small-scale innovations in product and process. And the organization of production must be horizontal rather than hierarchical – spreading authority and responsibility throughout the enterprise.

The transition also implies a different role for government. High-volume, standardized production required a system of publicly-supported primary and secondary education that guaranteed a steady supply of reliable workers, able and willing to follow directions. It also required that government subsidize basic research of a sort that occasionally yielded major breakthroughs, which could then be mass produced. Finally, the old form of production necessitated that government smooth out the business cycle so as to minimize unemployment and the accumulation of inventories during downturns. To the extent that macroeconomic measures failed to do the trick, government provided unemployment compensation, loans, and other measures to aid workers and companies until demand picked up once again.

But in the economy to which we are evolving, industries based on old methods of production will never come back. Thus measures to stabilize the economy and to cushion workers and firms from downturns in the business cycle must be supplemented by new measures to ease the transition of workers and firms to entirely new products and processes. Our systems of basic education must aim not only for numeracy and literacy, but also for creativity and the capacity to collaborate. And since the knowledge and skills people need in order to lead productive lives are continuously changing, education and retraining must be lifelong. Finally, government must not only sponsor basic research, but also nurture smaller-scale innovations, and help move them quickly from laboratory to workplace.

Thus far, the federal government has eschewed efforts to ease the transition to a new economy. The Reagan Administration, in particular, has rejected any call for a coherent industrial policy. But the Administration finds itself deeply entrenched in American industry by default – bailing out troubled banks, taking over pension obligations of failed firms, protecting industries which have made no commitment to modernize, and providing ever-greater subsidies to high-technology firms through the Pentagon's back door. As a result, ironically, the Reagan Administration's industrial policy is far more interventionist than that of any previous administration, but its consequences are perverse: older technologies are preserved, emerging ones are militarized.

As David Osborne reveals in this important study, many of our state governments exemplify government's new role in fostering the transition to a new economy. States have led the way in reforming basic education, devising methods of retraining older and disadvantaged workers, designing ways to finance startup businesses that may be too risky for venture capitalists but promise large social returns, 'incubating' small businesses, pushing technology out from research laboratories, and creating a range of partnerships between public, private, and not-for-profit sectors aimed at stimulating local and regional economic development.

These experiments – among smaller businesses and among state governments – defy easy categorization, for the simple reason that the categories we use to explain economic phenomena are themselves products of an older industrial era. Should small, innovative firms that specialize in design or production engineering be classified as service businesses or are they really more like manufacturers? Are state governments that help finance emerging businesses treading perilously close to socialism or are they spurring capitalism? These old categories have become irrelevant: the new businesses are hybrids somewhere between services and manufacturing, which add value to goods by tailoring them to specific end uses. The new state programs may entail strategic planning and even some state ownership, but they in no way substitute for the market. Difficulties in describing these phenomena occasionally result in confusion and misinformation, if not outright hostility. But it seems a safe guess that as our economy evolves, so too will our abilities to communicate about how it is doing so.

David Osborne's study for the Economic Policy Institute – and the larger book from which it is drawn – mark something of a milestone in this respect. Although it is still too early to say with confidence which of these experiments among state governments have been most successful, the encouraging news is that these experiments are going on, and eventually will yield an abundance of lessons about how to transform the American economy – efficiently and equitably. Osborne's insights thus signal the beginning of a critically important effort to collect, sift, and thus to understand what we have learned.

Robert B. Reich
Cambridge, Mass.
October, 1987

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CHAPTER 1:

THE NEW ECONOMY

The notion that America has entered a new economic era has become commonplace. The labels differ; some call it the "post-industrial era," some the "information age," others the "era of human capital." But most agree that the fundamental organization of the American and international economies that prevailed for three decades after World War II has changed.

Part of this transition has been the rise of international competition. In 1970, nine percent of all goods used by Americans were imported; by 1980, imports accounted for 22 percent. In 1960, only 20 percent of all goods produced in the United States were in active competition with foreign products; by 1980 a full *70 percent* were.[1] In basic, high-volume manufacturing, the rest of the world has gradually caught up to – and in many cases passed – the United States. Many American corporations simply cannot compete against nations where workers are paid a few dollars a day. Too often, U.S. companies cannot even compete with well-paid work forces in specialized manufacturing.

We have also been jolted by technological change: the microelectronic revolution has transformed the way in which our economy is organized. Factories have been automated; the proportion of the work force dealing with "information" has increased dramatically; and the economies of scale in much of the business world have reversed, favoring decentralization rather than centralization. These technological changes do not mean that manufacturing is no longer the backbone of our economy, that we can simply quit building and selling products and rely on services for our income. They do mean that we can manufacture more with fewer workers on production lines. While the percentage of our work force in manufacturing has declined steadily, the percentage of our gross national product provided by manufacturing has not.

America's adjustment to the twin realities of international competition and technological revolution has been painful. The pain is reflected in statistics that by now are well known. Average growth rates have dropped from about 4 percent in the 1960s, to about 3 percent in the '70s, to about 2 percent in the '80s.[2] The annual rate of productivity growth has plummeted from 3.3 percent between 1947 and 1965 to 0.9 percent between 1977 and 1986.[3] Since 1960, Japanese productivity has grown five times faster than ours.[4] Unemployment rates, even in good times, have risen from the four percent range in the 1960s to the seven percent range in the 1980s. Trade deficits have soared to $170 billion a year, costing American workers an estimated four million jobs.[5]

It has become increasingly clear that America's future depends less on our brawn than on our brains. In a world of low-wage labor, our competitive advantage lies in our ability to create research breakthroughs in the laboratory, to translate those breakthroughs into new products and processes, and to manufacture the results using a combination of technological sophistication and skilled labor that is still rare in the developing world. America's future, in other words, depends to a great extent on our ability to innovate.

The transition from an industrial economy built upon assembly-line manufacturing in large, stable firms to a rapidly changing, knowledge-based economy built upon technological innovation has created new opportunities, but it has also created a series of new problems in American life. The most obvious are those that reflect the loss of our competitive advantage in basic manufacturing: idle factories, dislocated workers, battered manufacturing towns and regions. Less obvious are the problems that inhibit our ability to innovate: a poorly educated and trained work force; high rates of illiteracy; adversarial relations between management and labor; inadequate supplies of patient capital; and corporate institutions that lag behind their foreign competitors in the speed with which they commercialize the latest research breakthroughs, adopt the latest production technologies, and exploit foreign markets.

The issue of international competitiveness has emerged as a primary focus of American politics. Just as the evolution of an industrial economy in the late 19th and early 20th centuries required government to solve new problems and create a fundamentally new role, so the impact of massive changes in the industrial economy in the late 20th century requires new solutions and therefore new roles for government.

Yet the federal government has failed to respond. Jimmy Carter was elected just as the public began to sense that something had gone wrong with the American economy. Like other national politicians of his day, he only dimly perceived the realities of the new economy. Ronald Reagan owed his election to the deepening economic crisis, but his solution was to reach back to the free-market myths of the preindustrial era. Attempts by an emerging group of younger economists and politicians to advocate a government role in "industrial policy" similar to the role successfully played by government in Japan and Western Europe were attacked not only by conservative ideologues, but also by more traditional liberal economists, who argued on essentially *political and cultural* grounds that industrial policies that worked elsewhere could not work in the United States.

The industrial policy debate was also sidetracked by the issue of whether government should attempt to "pick winners" by investing large sums in particular industries or technologies. The central recommendation of some of the better-known proponents of industrial policy was a Reconstruction Finance Corporation, to make large federal investments in targeted industries. Although many industrial policy advocates disliked the RFC notion, the proposal served as a lightning rod for critics, who argued that government could not predict what would succeed in the marketplace and could not keep political considerations out of its investment decisions.

At the state level, dire economic conditions produced a response that was less ideological and more practical and creative. In response to closing factories and regional distress, a wave of economic activism began to sweep through state government. Governors of both parties initiated programs to improve the competitiveness of their economies – which, after all, was the original point of industrial policy. Some call these state efforts industrial policies. Some prefer the label "industrial strategies" or "competitiveness strategies." Others use phrases such as "entrepreneurial policy" or "innovation strategy."

Whatever the label, to frame the choice as either picking winners or respecting the free market is to misunderstand the issue. There is no such thing as a "free" market, independent of government influence. The federal government has long targeted specific firms and industries with loans, tax preferences, research institutes, and the like. Every time a government decides to fund research, it must make judgments about which areas show the most potential for success. This is a far cry from subsidizing a particular product in the belief that it will triumph on world markets, as the British and French did with the Concorde. But it is an equally far cry from a pure "free market," in which government does nothing but provide a regulatory framework.

In their efforts to develop approaches appropriate to the new economic era, most states are focusing not on specific industries or products but on processes, such as technological innovation, capital formation, new business formation, the commercialization of research, and the adoption of new manufacturing technologies. They are trying to use government's leverage to reshape the marketplace – to heighten productivity, to quicken the pace of innovation, and to sharpen our ability to bring the fruits of our research to market. When they do invest directly in firms, the goal is usually to fill gaps left by private financial markets, such as small business lending or early stage venture capital. At times the importance of a new industry is so obvious – as in the case of biotechnology – that few question the wisdom of government investments in research. But even in the research arena, the goal of most state programs is, again, a process: heightened interaction between academia and business, so as to speed the commercialization of research already taking place.

This new role embraced by state governments involves a number of strategies. Some simply change the rules of the game – so as to encourage the capital markets to invest more patient capital in new and small business, for instance. Some create new public-private institutions to fill gaps that the private market has trouble reaching. Others forge new alliances between business and academia, to move research advances more rapidly into the marketplace. Still others encourage new relationships between management and labor, to heighten productivity on the shop floor. And some state initiatives create new social programs – some public, some private, some partnerships between the public and private sectors – to meet the needs of Americans for training, education, housing, child care, and the like.

This surge of innovation has occurred at the state level in part because the federal government has failed to respond to the new realities of the post-industrial era. If one looks back in history, however, one sees that a similar dynamic took place during the emergence of America's industrial economy. The reforms of the progressive era were a response to the new problems created by rapid industrialization: the explosion of the cities, the exploitation of child labor, the problems of overproduction and low wages in new industries based on high-volume manufacturing. Many of these reforms appeared first in states and localities, then were gradually institutionalized at the federal level, culminating in the New Deal. Many of Franklin Roosevelt's most important initiatives, including unemployment compensation, massive public works programs, deposit insurance, social security, and the farm credit system, were based on successful state programs. "Practically all the things we've done in the federal government," Roosevelt once remarked, "are like things Al Smith did as governor of New York."[6]

The experimentation taking place in America's states has followed no grand plan. It has proceeded in fits and starts, one state responding to this problem, another to that. The initial response to the economic troubles of the 1970s was a wave of "smokestack-chasing," as governors offered deep tax incentives to lure manufacturing plants to their states. This strategy has been largely discredited among economic development experts. Taxes are relatively minor items in the calculations made by firms searching for a new location, and tax breaks diminish the services (education, roads, sewers, etc.) that a community or state can support. By creating dependent local economies structured around one or two plants, smokestack-chasing also discourages the kind of economic chain reaction that leads to sustained growth.

Smokestack-chasing remains the economic development strategy of too many states and communities. But gradually it is being replaced by a new set of strategies designed to stimulate home-grown industries. Most of the new state economic strategies fall within eight categories. They include efforts to stimulate technological innovation; to fill gaps in capital markets; to encourage the growth of new and small businesses; to help manufacturing firms keep up with the latest production technologies; to move labor-management relations toward cooperation rather than confrontation; to stimulate exports; to improve education and training systems; and to bring the poor into the growth process. Let us examine these categories one by one:

1) Programs to stimulate technological innovation. In the new economy, high growth areas are almost invariably clustered around major research universities or institutions, out of which new technologies and firms have emerged. When Massachusetts Institute of Technology Professor John Donovan studied 216 high technology companies in the greater Boston area, he found that 156 of them had been born in MIT departments or laboratories.[7] To help stimulate the interaction between academic researchers and the business world that is necessary to generate this kind of spin-off effect, roughly half the states have created programs to fund joint business-academic research.[8]

By offering to match business grants for academic research with public money, the states have encouraged academics to look for businesses interested in their work and businesses to look for academics with research expertise in their fields. Other states have created new research institutions or poured money into key research departments at major universities, to bring them to the top of their fields. Still others have funded university research parks patterned on the Stanford Research Park, through which many of the early semiconductor firms in the Silicon Valley matriculated. Overall, some 40 states have created programs to promote technological innovation.[9]

2) Programs to fill gaps in capital markets. Capital markets are organized differently in every nation, giving each nation different strengths and weaknesses. In the United States, studies have pointed to several sectors of the marketplace that are not well served by conventional financial institutions. For instance, small businesses have trouble getting long-term loans from banks, primarily because the "transaction costs" (the costs of investigating the venture to evaluate the degree of risk involved) are too high compared to the return. In addition, new and growing firms outside certain advanced technology markets find it almost impossible to get equity capital. In part, this is because the potential profits, though significant, are not as spectacular as those needed to justify an extremely risky investment. (Venture capitalists assume that a large proportion of companies in which they invest will fail; they rely on extremely high profits from the few that succeed to cover their losses. Thus they need to see the potential for high profits in every deal they consider.)

State governments have responded with a variety of efforts to fill the gaps. Some have changed their financial regulations to allow or encourage banks or savings and loans to make certain kinds of investments. Others have authorized the creation of new kinds of private financial institutions, which specialize in lending to small and medium-size businesses. Some have provided incentives to banks to lend to small businesses. Others have provided partial funding for private venture capital firms with specific targets – particularly very early (seed) capital. Others have earmarked some of their public employee pension funds for investments in small business loans or venture capital. Finally, many states have created public development funds of one kind or another. In October, 1984, Inc. magazine counted 31 new public development funds created by state governments in the preceding year alone.[10] In 1985, the New York Times counted 20 states with public venture capital funds.[11]

3) Programs to encourage the growth of new and small businesses. In 1979, MIT Economist David Birch completed an analysis that has subsequently had more impact on state economic policy than any other single study. Using Dun and Bradstreet data on 5.6 million American firms representing 82 percent of all private sector employment, Birch found that over half of all new jobs were created by small, independent firms with fewer than 21 employees, and 80 percent of all new jobs were created by firms less than five years old.[12]

Birch's data has been challenged, but subsequent studies have confirmed his general point, and it is now widely accepted that most new jobs in the U.S. are created by small and young firms. For instance, the annual rate of business formation has more than tripled in the last 20 years, from 200,000 in 1965 to almost 700,000 in 1985. While employment in Fortune 1000 firms has declined over the past decade, nearly one-quarter of all new jobs are now accounted for by people who are self-employed or running a business – more than double the rate of ten years ago. Almost as many people run businesses or are self-employed today as belong to unions.[13]

The reasons for this shift have much to do with the fundamental economic transition we are experiencing. Large manufacturing firms are not only contracting as they lose market share to foreign competition, they are moving their own production offshore. (During the 1970s, for instance, General Electric eliminated 25,000 jobs in the U.S., while creating 30,000 jobs overseas.[14]) In addition, the micro electronic revolution has pushed the rate of technological innovation to dizzying heights, and new technologies are often brought to market by new firms. Finally, as noted earlier, these new technologies are substituting machines for people at a rapid pace, while reversing the economies of scale in mush of the business world.

To some extent, Birch's study has been misused by state governments. Small business advocates have pushed the study so hard that it has become identified with the thesis that small business is the key to economic development. However, many small service businesses create numerous low-paying jobs while contributing little to the generation of real wealth. As Birch himself has often stressed, the real lesson is that innovation – which often happens in young, growing firms – is the key to economic growth. Most small firms are irrelevant; they feed off growth, rather than creating it.

While advocates of laissez-faire policies responded to Birch's findings by arguing that there was little government could do to help small and young firms, state governments reacted by creating dozens of new programs that have proved the critics wrong. Some states created loan or venture capital funds for small or new firms. Many joined with the federal Small Business Administration (SBA) to sponsor Small Business Development Centers, which provide technical and managerial advice to entrepreneurs. A few made the deposit of state funds (or public pension funds) in banks conditional upon some kind of small business lending effort by the banks. Perhaps the most popular programs, however, have been small business incubators: buildings designed to nurture the growth of start-up firms. Incubators typically rent inexpensive space to start-up firms and provide shared secretarial services, photocopying, accounting, legal help, conference rooms, technical assistance, even seed capital. A Commerce Department survey found that firms hatched in incubators succeeded more than twice as often as they failed – the mirror image of survival rates for new firms in general. By mid-1986 twleve states had established programs to support incubators, which numbered 148 in the U.S. and Canada.[15]

4) Programs to help manufacturing firms keep up with the latest production technologies. The federal Agricultural Extension Service has long helped farmers to take advantage of advances in agricultural technology. During the 1980s, several states have adopted a similar model for manufacturing. Typically, the states create a network of "industrial extension agents" to work with small and medium-size businesses, whose managers seldom have the time to keep up with changing production technologies, nor the resources to adopt them. President Reagan's Commission on Industrial Competitiveness, chaired by Hewlett-Packard President John Young, underscored the need for such programs. "Perhaps the most glaring deficiency in America's technological capability has been our failure to devote enough attention to manufacturing or process technology," the commission concluded. "It does us little good to design state-of-the-art products if, within a short time, our foreign competitors can manufacture them more cheaply."[16]

5) Efforts to move labor-management relations toward cooperation rather than conflict. In an economy largely insulated from foreign competition and dominated by standardized, high volume manufacturing, friction between labor and management was tolerable. Today, we can no longer afford it. With virtually all manufacturers competing against low-wage foreign countries, higher productivity is critical. And as we move to flexible manufacturing, which requires constant adaptation on the factory floor, cooperation between workers and management becomes even more important. State governments have not made great strides in this direction, but there have been some efforts to mediate conflicts between labor and management, to create local and regional labor-management committees, and to encourage experiments in worker ownership.

6) Programs to stimulate exports. For a century, America's industrial powers did not have to worry a great deal about exports. They enjoyed both an immense domestic market for their products and – particularly after World War II – weak competition from abroad. While the U.S. relied on these advantages, the Japanese and Europeans (and increasingly, the Taiwanese, Koreans, and the rest) had to look to the export market for their growth. Today the Japanese manage exports through huge, sophisticated trading companies, while we leave every producer to his own devices. That may work for a few large corporations, but it does not work for most small and medium-size manufacturers.

To remedy this problem, the states have begun to experiment with export programs designed to help small and medium size businesses market their products overseas. They have also created insurance programs and loan funds for exporters. Wisconsin and Virginia adopted "mentor" programs, in which large exporters work with small companies to help them learn to export. The New York-New Jersey Port Authority has even launched a publicly-owned export trading company, to handle all overseas marketing for small and medium size firms that have either never exported or have never exported to a particular region of the world (see chapter V).[17]

7) Efforts to improve education and training systems. In this "era of human capital," as Robert Reich has dubbed it, America's competitive advantage lies in the use of sophisticated technology (in both production and services) and "flexible manufacturing" – the production of specialty items produced in limited quantities, which are not so susceptible to competition from foreign, low-wage assembly lines. Both of these arenas require workers who can adapt to new technologies, learn new skills on the job, and find new solutions as problems emerge. When a machine shop brings in computer-controlled machining centers, for instance, machinists long skilled in manual operations must learn to operate through computer terminals. When Ford or Mazda builds a new auto plant, it looks for employees who can operate computers, rotate through various jobs, recognize and solve problems that emerge during production, and suggest improvements. Technology may be de-skilling many American jobs, particularly in the service sector. But in manufacturing, a well-educated, skilled work force is now critical to our ability to compete.

State governments have put an enormous amount of energy and money into education reform during the 1980s – most of it justified as a necessary ingredient of economic growth. They have done less well on job training. The difference stems primarily from the simple fact that state governments have long been responsible for education, while the federal government has funded most training programs. As federal money for training has dwindled, however, the states have begun to respond with new, highly targeted programs – particularly in the area of retraining for dislocated workers.

8) Efforts to bring the poor into the growth process. Even in high growth states, such as Massachusetts, pockets of stagnation remain. While most states have simply focused on increasing the size of the pie, a few have experimented with ways to shift the geographic pattern of expansion into regions that have been left behind. Some have also tried to target particular economic development efforts to the poor, minorities, or those on welfare. Both of these efforts are important in an economy that is increasingly divided into tiers. While growth centers flourish on both coasts, much of the industrial and agricultural heartland remains in recession. While those with education enjoy widening job opportunities, those without face narrowing horizons.

Not all of these efforts are unique to state government. The National Science Foundation has funded a number of University-Industry Cooperative Research Centers and Engineering Research Centers, the Export-Import Bank has long helped insure and finance exports (primarily for large firms), and the SBA has initiated a variety of programs for small businesses. But for the most part, federal economic policy remains focused on macroeconomic concerns: monetary policy, fiscal policy, and tax policy. During the sustained prosperity of the post-World War II period, the federal government could afford to ignore microeconomic concerns such as new business formation, regional capital markets, and labor-management relations. Because the American economy was so much stronger than those of its competitors, economists believed that they could fine-tune it into full production simply by adjusting interest rates, budget deficits, and the like. When growth slowed in the seventies and eighties, however, fine-tuning no longer yielded the same results.

In an economy under siege by foreign competition, macroeconomic adjustments are no longer enough. Quantitative factors are important, but qualitative factors have become equally critical. Our success is no longer a result of how much we produce, but how well we produce it. The problem is not simply how much capital is available, but what kind, and where it goes – to what kind of firms. The challenge is not only to step up our research efforts, but to make sure that the results are rapidly commercialized. The question is not just how many workers we have and at what wages, but how well they are prepared and how well they work together.

It is to these microeconomic questions that state governments have addressed themselves. This is hardly because governors and state legislators have superior insight; it is simply because microeconomic levers are the only levers available. Unable to influence the economic aggregates of money supply and interest rates, they focus on problems they can affect: regional capital markets, the commercialization of technologies developed at local research institutions, the needs of local entrepreneurs. Thus while national economic debate in the Reagan years raged over macroeconomic questions – the federal deficit, the money supply, and tax reform – state governments were busy reopening the microeconomic policy front, which had largely been dormant since the 1930s.

To provide a more detailed picture of recent innovations in state economic development policy, this report will offer case studies of three of the most active states: Massachusetts, Pennsylvania, and Michigan. It will then briefly review a number of programs in other states. In the concluding chapter, it will evaluate various models of state intervention and describe the principles that underlie successful programs. Finally, it will address some of the questions raised by the economic activism of America's governors and state legislators – among them the national implications of this activity. Should the federal government adopt the most successful programs and spread them to every state? Or are some forms of microeconomic intervention best left to the states? If so, which programs belong at the state level, which at the federal level? And perhaps most important, can the principles underlying successful state-level efforts be used to guide new federal efforts to deal with issues that transcend state borders, such as foreign trade, national capital markets, and the structural problems of individual industries?

CHAPTER II:
MASSACHUSETTS

Because necessity remains the mother of invention, innovation in economic policy often appears where the pain is most severe. In the mid-1970s, the pain was nowhere more severe than in Massachusetts. Though Massachusetts today is an unparalleled economic success story, in 1975 national columnists were calling it "the new Appalachia."

Unemployment was 12 percent. The old mill towns of Lowell and Lawrence and Fall River and New Bedford brought back memories of the Depression. For those lucky enough to have jobs, manufacturing wages had slipped to 93 percent of the U.S. average.[1] In a state dependent on a growing high-tech sector, the end of the Vietnam War and of the Apollo space program had come as a rude shock. To make matters worse, the Nixon administration – in what many saw as revenge for the state's pro-McGovern vote in 1972 – had closed or significantly reduced five of the state's military installations, eliminating 15,000 jobs.[2]

The First Dukakis Administration: Filling Capital Gaps

Michael Dukakis, inaugurated as governor in January 1975, was a typical liberal of the late sixties and early seventies. His passion was not economic growth, but the revitalization of Massachusetts' declining cities. The greatest symbol of his commitment was the now famous Lowell Heritage State Park, through which the state pumped more than $10 million into downtown Lowell, spent another $20 million on new highways to get people there, and helped convince the federal government to establish a national park, an effort that brought in another $40 million. In 1977, partly because the city and state had committed themselves to the revitalization effort, Dr. An Wang decided to build the first of three Wang Laboratories office towers in Lowell. By the mid-'80s, he employed some 9,000 people there, and the local unemployment rate hovered just over three percent.

Lowell was a dramatic success story, but the zeal with which Dukakis tried to force private investment into urban centers brought him into repeated conflict with business. In western Massachusetts, for instance, the governor tried to force a developer to put a planned mall in downtown Pittsfield rather than on the outskirts. When the developer balked, the governor minced no words. "There will be no access to the state highway," he declared. "Forget about your development. We just won't permit it."[3]

Incidents like this quickly brought business anger to a boil – and ultimately forced the administration to rethink its priorities. Massachusetts' foremost problem in the mid-'70s was not the location of growth but the absence of growth. "What Massachusetts needs is a vigorous economic development program to bring balance to the social programs of the Sixties and the environmental program of the early Seventies," the administration concluded, in a major economic policy document published in 1976. "We must acknowledge that more jobs and higher incomes are prerequisites to the improvement of the public welfare and the enjoyment of our rich natural and man-made environment."[4]

The rethinking process resulted in a series of new "quasi- public" institutions to provide capital for small and growing companies. In 1974, a group of community activists led by State Rep. Mel King had proposed a $10 million Community Development Finance Corporation (CDFC), to invest in businesses in poor communities. Dukakis had endorsed the idea during his '74 campaign, and in 1975 the legislature had passed

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*The word "quasi-public" is used to indicate that while operating with public funds, most of these institutions are run by independent boards which included representatives of the private sector. The idea is to use private-sector methods to achieve public purposes.

the bill (but failed to appropriate any money). King's group had gone on to develop proposals for several other quasi-public capital funds and had convinced Dukakis to create a Task Force on Capital Formation, which it hoped would endorse them.

The task force documented three gaps in the state's capital markets. The first was the gap that CDFC sought to close: small businesses in poor communities found it almost impossible to obtain bank loans or other capital. Second, the task force found that the financial markets were unwilling to take the risks associated with long-term lending to small businesses in general. Third, the venture capital market for young, growing firms – a market that had been born in Massachusetts and had propelled the growth of its high-tech sector – had almost dried up.

The Dukakis administration and the legislature responded to the task force report by funding the Community Development Finance Corporation and creating three new capital institutions: the Massachusetts Industrial Finance Authority (MIFA), to issue tax-exempt bonds for business expansion projects; the Massachusetts Technology Development Corporation (MTDC), to provide seed capital for start-up technology firms; and the Massachusetts Capital Resource Company (MCRC), to provide debt and equity for growing technology companies.

Of the four new agencies, MIFA was the most traditional. It has issued over $3 billion in tax-exempt bonds since its creation and claims to have created more than 70,000 jobs. In reality, many of its projects would have gone forward without the tax-exempt bonds; they were bankable deals that took advantage of a public subsidy to lower their cost. Nevertheless, compared to other state bond agencies, MIFA has established a solid track record. It has restricted its bonds for commercial projects (such as shopping malls) to downtown and neighborhood business districts, for instance – boosting downtown redevelopment and avoiding abuses common in other states, such as the use of tax-exempt bonds for golf courses and suburban shopping malls.

In 1985, MIFA began issuing bonds for pools of smaller loans, providing low-interest financing to businesses that were previously too small to qualify. In 1986, after federal tax reform restricted the use of industrial development bonds, it was the first state bond agency to issue taxable bonds for small business loans. By securing guarantees from banks (for a fee), MIFA was able to sell the bonds at low interest rates, despite the fact that they were no longer exempt from federal taxes.

The Massachusetts Technology Development Corporation (MTDC) was the second public venture capital firm established by a state. (The first was in Connecticut.) It makes small ($100,000-$250,000), early-stage loans and equity investments in technology companies that have been unable to secure sufficient capital from conventional sources. Its primary goal is to convince private investors to come aboard. By mid-1986, MTDC had invested $7.4 million, and its portfolio companies had raised more than $96 million in private capital.[5]

In strictly financial terms, MTDC has been relatively successful. By mid-'86, it had experienced gains of over $5 million and losses of just over $1 million.[6] With investments in only 29 active companies, however, MTDC can hardly claim to have had a major impact on the Massachusetts economy. Its creators could not foresee that in 1978, just as they legislated MTDC into being, a nationwide boom in venture capital investment would begin – triggered by a cut in the capital gains tax rate and a move into venture capital by pension funds and other large institutional investors. Nationally, net new funds committed to venture capital would rise from $39 million in 1977 to $4.5 billion in 1983. By 1983, nearly 60 venture capital firms would call Massachusetts home, and almost 15 percent of a nationwide pool of $12 billion would be invested in Massachusetts companies.[7] Against this backdrop, $7.4 million invested in 29 companies does not appear terribly significant.

In response to this development, MTDC has targeted what it still considers to be a capital gap: seed funds for start-up companies with lower potential profits than conventional venture capitalists require. It has also launched a Management Assistance Program and a Financial Packaging Program to help entrepreneurs draw up their business plans, identify the likeliest sources of private (or public) money, and make their cases to investors. According to MTDC, 62 companies used these services in fiscal 1985, of which five received "substantial private-sector financing." MTDC actually performs an even more important service than this, however: today a significant percentage of all deals it puts together are snapped up by private investors, who are reluctant to invest the time required to investigate and package small ventures, but who will invest after MTDC has done the spade work. In this way MTDC is not only filling a small capital gap itself, but encouraging the private sector to do so.

The origins of the third new capital fund created in 1978, the Massachusetts Capital Resource Company (MCRC), go back to the early 1970s, when the Massachusetts legislature imposed a one percent tax on the life insurance industry's gross income (as opposed to profits). The legislature was retaliating against the industry for its role in financing a campaign to defeat a proposed graduated income tax. Since then, industry representatives had complained repeatedly that the tax put them at a disadvantage when competing against companies in other states.

The Dukakis administration was sympathetic. But it also knew – thanks to a study by the New England Regional Commission – that the life insurance industry in Massachusetts was investing very little in the high-tech firms that were so critical to the state's economic future. The administration suggested a deal: if you put together a $100 million Capital Resource Company and invest the money over five years in unsecured loans (meaning that no collateral is promised in case of default) to businesses that cannot get affordable money elsewhere, we'll give you your tax break. The tax cut would be phased in over five years – but only if MCRC met certain targets for jobs created and loans granted each year.

The bill also established strict investment criteria regarding company size, geographic location and ownership (a certain percentage had to be in distressed areas, another percentage owned by minorities, and so on). If the fund failed to meet its targets, the tax cut could be rescinded and the insurance companies would be required to pay back taxes. Although the legislation did not spell this out, its authors' intended to force the life insurance industry – a huge reservoir of capital – to support the medium-size, expanding technology firms that held the key to Massachusetts future growth.

Insurance industry executives were not pleased. Most believed MCRC would fail; they saw it as the price they had to pay for a tax break. Foster Aborn of John Hancock, who has chaired MCRC's finance committee since its inception, still calls the tactic "high level bribery." But he calls the result, MCRC, "an outstanding success." By 1986, MCRC had loaned over $140 million to more than 100 companies. The state uses a conservative formula to count jobs created, which ignores the ripple effect of a growing company on suppliers and service businesses in the area. By that formula, MCRC had created over 8,000 jobs by 1986.[8]

Perhaps the most notable example of MCRC's impact was one of its first loans, to Wang Laboratories. In 1978, Wang was not yet the giant company it is today. Its sales were $198 million a year, and the office word processing systems that would make Wang a household name had been on the market only a year. The potential for expansion was tremendous – the company would more than quintuple its sales in the next five years – but the capital necessary to finance that expansion was scarce. Banks had refused to give the firm long-term loans, leaving it dependent upon short-term, revolving credit lines. Its primary bank, the Bank of Boston, was threatening to call in a major loan. "At that point, Wang's product cycle was obsolescing every three years," explains Aborn. "It was very hard for a banker to look into the future and see whether long term debt could be paid off by operations, because operations were changing too rapidly."

MCRC stepped into the breach. It gave Wang a ten-year, $5-million "subordinated" loan – meaning that if the company went bankrupt, MCRC would be repaid only after all other lenders had been repaid. Thus protected, Wang's banks came forward with another $20 million in long-term debt, and the rest is history.

The MCRC loan was not the only factor in the banks' decision. "This company was moving, and they could see the handwriting on the wall," says Wang Assistant Treasurer Martin Miller. "But there's no question that the MCRC loan helped, because you had $5 million of debt capital underneath them. The banks looked at that very favorably. We were a small company. When you can get somebody not only to give you long-term debt, but to give it to you on a subordinated basis that's very hard to get at that stage in your growth."

Wang is now one of the nation's 200 largest businesses, with sales in some 150 countries. In 1985 its sales were $2.35 billion – twelve times the 1978 figure. Even after cutbacks in 1985 and '86, its work force had grown from 4,000 (roughly half of them in Massachusetts) in 1978 to 30,000 (roughly 14,000 of them in Massachusetts) in 1987.

Wang is a dramatic example, but the process has been repeated on a smaller scale more than 150 times. Not all of MCRC's loans have turned into success stories; as of 1986, MCRC had written off $8 million in loans. But the original $100 million investment had generated a profit of $21 million. In the process, MCRC has helped both the life insurance industry and the banks invest in riskier firms. State economic development officials believe MCRC has not taken enough risks in its lending. From their perspective, which puts a premium on high-risk investments in poor communities, they have a point. But Aborn argues that a conventional lender in the insurance industry would be fired for loans as risky as those in the MCRC portfolio. "We have responsibly loaned over $140 million, and we still have most of our capital in place to do it again," he points out. "We have done it at close to marketplace terms, so we have not taken business away from tax-paying companies like banks. There is no other organization in the state which has done anything like this."

Had the state tried to capitalize MCRC itself, it would have found it impossible to raise $100 million ($10 million for CDFC was a struggle). More importantly, a state loan program would have had little impact on the investment behavior of the private sector. MCRC, in contrast, has helped change the investment patterns of an entire industry. Today, Massachusetts life insurance companies routinely invest in the previously shunned high-tech sector – so routinely, in fact, that MCRC has shifted more than half of its capital into basic industries such as textiles, paper and fish processing, where long-term subordinated debt and equity are harder to come by. MCRC cannot claim all – or even most – of the credit for the life insurance business's change of heart, but according to Aborn and others, its success was one of many factors that convinced the insurance executives that they could profitably invest in companies like Wang.

The principle involved here – that it is far more effective to change private investment patterns than simply to make public loans – has since become a centerpiece of state economic development thinking. (It was already reflected in a few federal development institutions, such as the Small Business Administration.) The experts call it "wholesaling," to distinguish it from "retailing," or providing direct public investments. Not all capital gaps can be filled this way; some areas are simply too risky for all but the public sector and a few hardy private investors. But as MCRC has demonstrated, wholesaling can be extremely effective under the right conditions. And as common sense dictates, the impact of a reshaped private marketplace, with its billions of dollars of capital, can dwarf the impact of a few million dollars in public loans.

Investing in Poor Communities

Wholesaling has one other advantage: it avoids altogether the temptation to make public loans for political reasons – a temptation that, when indulged, can discredit an entire economic development strategy. Massachusetts experienced this side of the coin with the Community Development Finance Corporation, which lost almost $4 million out of the first $6 million it invested – with a third of the loss on one loan made primarily because of political pressures.[9]

To be fair, CDFC's problems were due as much to the inexperience of its management and the difficulty of its mission – investing in firms located in poor communities – as they were to politics. CDFC is an object lesson in the difficulty of finding workable solutions to the problems of poor communities. It is also a testament to the benefits of an experimental approach, under which new efforts are carefully re-evaluated and refocused after their first four or five years.

CDFC was conceived as a development bank that would invest in businesses owned or sponsored by community development corporations (CDCs). CDCs were an outgrowth of the activism of the 1960s, particularly in minority communities. The first

CDCs were created, with foundation funding, to empower poor communities – to give them the tools to build from within, by creating businesses, rehabilitating housing units, and the like. They were run by boards made up of community members, which hired professional staffs. A few years into the War on Poverty, the federal Office of Economic Opportunity adopted CDCs and began pouring significant funding into them. In the late '70s a few cities and states launched modest programs to subsidize them, and by the time the Reagan administration cut off federal funding in 1981, most CDCs had become adept at securing federal, state, local and foundation grants, particularly for low-income housing development. Estimates of their number by the mid-1980s varied from 1,000 to 5,000.

CFDC is a central piece of one of the most ambitious strategies launched by any state to stimulate development in poor communities. The other pieces are the Community Economic Development Assistance Corporation (CEDAC), which provides technical assistance to CDCs, the Community Enterprise Economic Development (CEED) program, which provides small operating grants to CDCs, and the Government Land Bank, a real estate development bank for distressed areas. Since a management shake-up at CDFC and a shift in focus at CEDAC in 1983, the system appears to be making headway.

CDFC's initial strategy was bathed in idealism: it would invest in firms launched directly by CDCs, to create jobs and generate income for the CDCs. Unfortunately, all five such ventures rapidly failed. The staff then concentrated on funding businesses referred to them by CDCs, with the requirement that a representative of the CDC sit on the board. That strategy fared only slightly better; by 1986, loss rates from CDFC's first four years were 84 percent, 42 percent, 40 percent, and 85 percent.

The problems were manifold. Few CDCs had the expertise to evaluate business plans or provide technical or managerial assistance to businesses, much less the ability to recruit solid entrepreneurial talent capable of launching new firms. The CDCs "took every disadvantage you could have and combined it into one – marginal businesses, poor work forces, everything you could imagine," says Carl Sussman, director of CEDAC. In addition, small business people generally disliked the idea of having someone from a local community organization sit on their board and look at their books. The CDFC staff was not only inexperienced, it never tried to establish relationships with banks that might also lend to its businesses. Finally, the staff failed to work closely with businesses after it invested, to help them survive. CDFC's experience quickly showed that entrepreneurs in poor communities needed much more than capital, yet neither CDFC nor CEDAC had the experience necessary to provide adequate management assistance, nor the resources to hire first-rate consultants to do the job. Ironically, an evaluation done by a consulting firm in 1982 concluded that while CDFC's presence had stimulated the formation of many CDCs, it had distracted them away from housing development, their real area of strength, to business development, a field in which they generally failed.

After receiving the report, the board fired CDFC's president. In the interim, with an acting president from the administration of Ed King, Dukakis's successor, it made a $1,325,000 investment to save one of the largest employers in the already depressed town of Adams. The administration calculated that if Adams Print Works closed, it would cost the community 900 jobs, a number large enough to create intense pressure to save the plant. Political pressure was even brought to bear on the federal Small Business Administration – principally through Rep. Silvio Conte, who served on the House committee that oversaw SBA appropriations – to reverse its decision not to guarantee a bank loan to the company. The SBA had insisted that the new owner put $200,000 of his own money into the deal, to insure that he was at significant personal risk. Despite his refusal to put more than $12,500 of his own money at risk, it bent under the political pressures and the deal went through. Eighteen months later the company went belly-up anyway, taking CDFC's money with it.

In 1983 the board hired Charles Grigsby, a respected black venture capitalist, as CDFC's new president. Grigsby had served as a lending officer and vice president at the Bank of Boston, then founded the Massachusetts Venture Capital Corp., a minority enterprise small business investment company (MESBIC). For nine years he had run the only minority investment fund in the state; during that time he had provided the initial capital for the only black-owned bank in New England (in which CDFC also invested heavily).

Grigsby made a series of changes at CDFC. He minimized the role of CDCs in business development, eliminating the requirement that a CDC representative sit on the board of each company receiving CDFC money. At the same time, he shifted 50 percent of CDFC's investments to low- and moderate-income housing, an area in which CDCs played central roles. He negotiated an agreement with CEDAC that gave CDFC responsibility for all technical assistance on business investments and CEDAC the responsibility on housing deals. He established working relationships with the banking community, bringing banks in on every deal he could. (In such an arrangement CDFC normally provides equity and/or subordinated debt, playing a role similar to MCRC's in the Wang deal.) He launched a loan guarantee program, through which CDFC (after evaluating the company) guarantees 50 percent of the shortfall on bank loans of $50,000 or less – thereby making it easier for companies to secure those loans. And he began riding hard on firms in which CDFC invested, as a private venture capitalist would.

In several major deals, including the black-owned bank and a minority-owned supermarket (the largest employer in Boston's black Roxbury neighborhood), Grigsby used CDFC's stock to force out the old management and bring in new people who turned the businesses around. With smaller companies, he sent the owners to entrepreneurial training courses, brought in experienced business advisors to work with them, and forced them to develop and meet weekly business plans detailing how much would be produced, how much would be spent, and how much would be brought in.

"Companies consider that torture," Grigsby says, "but I consider it technical assistance. To me, it's the only way to make a small company work out – it's the only thing that's worked in three years here and nine years in venture capital. It's like Alcoholics Anonymous: you've got to go in there and confess. I tell them, You're going to write these six checks this week – you sign one more and I'm going to cut you off."

Although losses from CDFC's first five years have reached almost $4 million, the new portfolio assembled since Grigsby took over has been profitable. Investments made in his first full year, fiscal 1984, have experienced a six percent loss rate, although Grigsby expects them to hit 10-12 percent eventually. (Profits on other deals would more than compensate for such losses.) That figure is appropriate for an institution designed to take greater risks than private banks; were its loss rates lower, one might argue that it was not taking enough risks. Indeed, community development activists at times make that argument today. Certainly compared to the overall failure rate for small businesses, CDFC's new portfolio is performing well.

CDFC's turnaround under Grigsby demonstrates the importance of finding experienced investment people to run public or quasi-public development agencies. More importantly, it shows how critical hands-on assistance is if small businesses are to succeed. Even if it continues to improve, however, CDFC is too small, and its geographic target is too large, to have a significant impact. It has invested $16-$17 million since 1978, and its current portfolio is about $7 million. (Grigsby has tried unsuccessfully to get the legislature to recapitalize it with $12 million, so that he can launch several new programs and sustain about $3 million in new investments each year.)

CDFC's most important function today is probably as an intermediary between the commercial banks and poor communities. "The banks now come to us with deals that they can't otherwise do, but they think ought to be done," Grigsby explains. These are primarily deals which appear sound to the banks, but which fall outside the relatively conservative standards they must use to evaluate loans – because the loans are not fully secured by collateral, for instance. By subordinating its debt or handling the non-secured portion of the loan, CDFC makes it possible for the banks to take part of the loan. Thus it stretches the boundaries of what the private financial community can do in poor communities. It is also building the capacity of CDCs to do low-income housing development (in Boston, they undertake virtually all such development) by providing financing that is difficult to get from banks. CEDAC appears to have found its niche in housing development as well.

The other major player in Massachusetts' community development system is the Government Land Bank, which is essentially a real estate development bank for distressed areas.[10] The Land Bank was originally created by the legislature in the mid-'70s to help redevelop the military installations closed down by the Nixon administration. In this role, for instance, it bought the 140-acre South Boston Naval Annex from the federal government for $4.7 million, sold it to the city of Boston's Economic Development and Industrial Corporation on a long-term mortgage, and provided resources to help transform it into a Marine Industrial Park that employed almost 1500 people by 1985.

In 1980 the legislature broadened the Land Bank's mandate to deal with three new categories of property: surplus federal property, surplus state property, and blighted or substandard properties throughout the state. Today the Land Bank invests primarily in the six geographic areas, called "Targets of Opportunity," on which the second Dukakis administration has focused its economic development efforts. Although it has more resources than CDFC (by the end of 1986 it had spent roughly $32 million and had close to $20 million in funds still available), the Land Bank is hampered by the fact that real estate development requires more capital than small business investment. With its limited resources, the Land Bank has tried to develop a wholesaling strategy by doing pilot programs which can then be duplicated by others. In the early 1980s, for example, it initiated a program to rehabilitate abandoned buildings for affordable housing; it even pushed a tax bill through the legislature to make rehabs more attractive. A few years later the Boston Housing Partnership – a consortium of Boston's major banks, the city, several foundations, CDFC, and Boston's CDCs – launched an extensive rehab effort, which has since been replicated statewide by the Dukakis administration. More recently the Land Bank launched a program to develop low- and moderate-income cooperative housing, to demonstrate the viability of housing coops to others active in the marketplace. It has also rehabilitated commercial buildings in distressed urban centers, provided mortgages for industrial facilities, and financed a small-business incubator in Fall River. A legislative commission on small-business incubators has proposed that it run a statewide incubator program.

The Land Bank invests in partnership with the private sector, normally sharing a first mortgage with a bank. The Land Bank also makes certain deals possible for a bank by providing the expertise needed to evaluate them – "pulling down the learning curve" for the bank, in Bassett's words. Over the past decade, it has participated in 35 deals. Only one of them has gone bad, a $1.5 million loan to a company that restored and reopened a large dry-dock facility closed by Bethlehem Steel in 1982. When the property was sold, however, the Land Bank recouped its loss.

Like CDFC after its reorganization in 1983, the Land Bank's success is mitigated by its small size and large target area. Between the two institutions, they have invested close to $50 million, spread over about 75 firms and projects. Despite CDFC's early failures, the bulk of the money has been used wisely, and the state is better off for the investment. Few of the businesses and real estate projects in which they have invested would have found sufficient private financing without them. Their success tells us something about the possibilities of development institutions in poor communities, while their limits tell us that Massachusetts has not yet found the best models.

The basic problem is that investing $50 million in Massachusetts' poorer communities is a bit like tossing a pebble in the ocean. There is a small splash, a bit of a ripple, and silence. Even if the scale were larger, the system is not really doing what its creators intended: building the capacity for entrepreneurial development in poor communities. CDFC builds capacity in individual small businesses, while the entire network builds the capacity of CDCs to develop housing. But there is no institution or program that systematically builds the capacity to create businesses.

Hindsight and experience elsewhere suggest that the state might have been wiser to use its $50 million to finance a comprehensive development institution in each of the primary Targets of Opportunity. Such an institution might make conventional bank loans, business loans, venture deals, and real estate investments, while also providing job training, creating incubators, providing hands-on assistance to local entrepreneurs, and so on.[11] It is impossible to say whether such an effort would work until a state tries it. But Massachusetts is in many ways the perfect state to try it: it has the resources, the personnel, and the experience necessary to guide the experiment.

The King Interregnum

Governor Dukakis lost the Democratic primary in 1978, a victim of the business community's anger, the anti-government, anti-tax mood that swept the nation in the high-inflation years of the late seventies, and the alienation of his own party's left wing. His challenger, Ed King, promised a dramatic reduction in local property taxes, and as governor he enthusiastically supported Proposition 2 1/2, which accomplished that feat. King preserved the new system of quasi-public agencies, although he tried several times to kill CEDAC and CEED. [12] King also presided at the creation of an important new quasi-public agency, the Bay State Skills Corporation (BSSC).

Bay State Skills is a job training agency, originally targeted at a shortage of engineers in the state but broadened when the shortage abated. Job training in Massachusetts, as in other states, had long been funded primarily by the federal government, through more than a dozen different categorical grants. To this day the training system in Massachusetts consists of 25 separate programs administered by five secretaries and two boards – most of it funded, and therefore controlled by the federal government. Although there is pressure from the legislature and the governor's Office of Training and Employment Policy to rationalize the system, it remains fragmented and – thanks to severe federal budget cuts in recent years – underfunded. Within this chaotic, $370-million system, the Bay State Skills Corporation has emerged as a small, $6-million-a-year gem. [13]

The core of BSSC is a grant program, in which the agency matches corporate grants of money, time and/or equipment to training institutions to set up new training programs. The institutions include everything from graduate schools to vocational-technical schools. BSSC also funds special institutes, again on a matching basis with industry, through which instructors from academic institutions can learn about emerging technologies from industrial experts.

BSSC staff members look upon themselves as venture capitalists in the training arena. By offering start-up capital (grants are often for 100 percent of the first year's costs, 50 percent of the second, and a small portion of the third), they act as catalysts, bringing business and academic institutions together to create new training programs that respond to genuine demands in the marketplace. Many state training programs are hopelessly out of date, training people for jobs that no longer exist on equipment that is no longer used. Yet it is politically difficult for states to force vocational-technical schools and community colleges, which do much of the training, to change their programs, because that means shutting down courses and firing instructors. By offering outside funding that the academic institutions want, BSSC staffers argue, they gain leverage, which they can use to force changes in the curriculum.

The Bay State Skills Corporation is a demand-driven program – that is, it funds only those training programs the business community is willing to help pay for, and therefore genuinely needs. As a result, it is remarkably efficient. Within a year after completing their training, 87 percent of its trainees find jobs – and that figure includes welfare recipients, dislocated homemakers, the mentally retarded, and other disadvantaged populations served by BSSC. (The sponsoring firms are not required to hire the trainees, but they normally do.) The program's efficiency also stems from its status as an independent, quasi-public agency rather than a traditional government bureaucracy, according to staff members. This independence allows it to operate like a business – paying its bills on time, making decisions quickly, and generally talking the language of the private sector.

One caveat must be added, however. Demand-driven programs like BSSC always tend to skim those who are most job-ready, because they are the easiest to train and place. In BSSC's case, this tendency is counterbalanced to some extent by its training programs for the disadvantaged. But even so, BSSC misses those in between the extremes: the working poor; and the unemployed who do not fall into a "disadvantaged" category, but who also lack the educational background needed for many BSSC training programs.

Bay State Skills could probably be expanded to reach the populations it now misses, using a principle it has already adopted: the less job-ready the target population, the lower the financial match required from the participating business. By all accounts, the model works for even the least job-ready populations. Its success is reflected not only in its high placement rate, but in the fact that five other states have already copied it.

The Second Dukakis Administration: Targets of Opportunity

Dukakis defeated King in the 1982 Democratic gubernatorial primary and was re-elected in the general election. For much of his second term, Massachusetts would enjoy the lowest unemployment rate of any industrial state.[14] In this environment, the instincts that shaped Dukakis's first four years – to channel growth into the state's declining urban centers – were far more appropriate. When growth is no longer the fundamental issue, the location of growth can be.

With some city centers already rebounding, Dukakis shifted from an urban to a regional focus. The organizing principle of his second term became the use of every means available to shift the state's rapid growth into what he called his "Targets of Opportunity": southeastern Massachusetts, the Northern Berkshires (northwestern Massachusetts), the Northern Tier (north central Massachusetts), the Blackstone Valley (the Worcester area), Montachusett (the Fitchburg and Gardiner areas), and Roxbury.

Rather than creating a formalized program, Dukakis has followed the ad hoc pattern of his first term, trying to bend every aspect of of state government to favor his targeted regions. When the legislature was deciding where to put a new Microelectronics Center, Dukakis fought hard for Taunton, in southeastern Massachusetts. (He lost, but the front-page attention helped Taunton fill its new industrial park and bring its unemployment rate down from 13.9 to 4.5 percent in three years, according to the mayor.)[15] Every few months the governor led a group of Massachusetts business executives on a tour through one of his distressed regions, working to convince them to channel their expansion into those areas. He encouraged the formation of regional development organizations, with assistance and, at times, money from the state. He funded new State Heritage Parks, on the Lowell model, in eleven other cities. He secured $12 million in state funding for a publicly-owned cross-country ski resort and condominium complex in the most depressed part of the Northern Berkshires, to be built by a private developer who plans to invest $260 million. He created a special $1 million training fund for use by businesses moving to or expanding in southeastern Massachusetts. And whenever a company talked of moving out of a target area, or expressed interest in moving in, his economic development staff put together whatever deal was necessary to secure the investment – tapping the Massachusetts Industrial Finance Authority, the other quasi-public agencies, and other state programs.

"The states are perfect for this kind of thing," Dukakis argued. "We can't set Federal Reserve policy, we don't deal with trade policy, but this kind of targeted development in distressed areas is something that the states are particularly suited to do."[16]

Dukakis even focused his new research-and-development effort, the "Centers of Excellence" program, on the state's distressed regions. While the state is providing $6 million for a Center for Polymer Science at the University of Massachusetts at Amherst and $1 million for a Photovoltaics Center at Logan Airport, the Centers of Excellence program will primarily provide matching funds for joint business and academic research projects at the state's universities. This effort so far involves three "centers without walls," each with a technology focus and a geographic target: biotechnology in Worcester; marine science in southeastern Massachusetts; and polymer science, primarily at the University of Massachusetts campuses in Amherst and Lowell. The board has also proposed a fourth center in applied technology – not for R&D,

but to help small and medium-size businesses modernize their production facilities and adopt new technologies.

In their first round of grants, announced in the fall of 1986, the centers awarded a total of $1 million to 21 projects, matching roughly $2 million in industry and academic contributions. Dukakis has proposed $3.8 million in state funding for the Centers of Excellence in fiscal 1988. Still in its formative stages, the program is insignificant compared to similar efforts in other states, such as Pennsylvania's Ben Franklin Partnership. But it has the potential to move in the same direction.

The Commission on the Future of Mature Industries

The other major economic policy initiatives of the second Dukakis administration came out of a commission that the governor set up in 1983 to negotiate a compromise solution to the nettlesome issue of plant closings. For five years, the AFL-CIO had pushed for a bill requiring advance notification of plant closings. Dukakis had traded support for such a bill for labor's backing in the '82 election. Since his reelection, however, Dukakis has been far more solicitous of business than he was during his first term. Rather than try to push through a bill uniformly opposed by the business community, he created a 38-member commission, including leaders from business, labor, government and academia, to negotiate a compromise. He sought to broaden the issue by also asking the commission to develop a comprehensive strategy to strengthen the state's so-called "mature" industries.[17]

At the time, 15 percent of the Massachusetts work force was employed in mature industries, including machine tools, needle trades, fabricated metals, and transportation equipment. Most of these industries were located in Dukakis's Targets of Opportunity – indeed, these regions were distressed largely because mature industries were in decline. According to research by the commission staff, Massachusetts lost only .5 percent of its employment base in plant closings in 1982 and '83. But the percentages were far higher in Dukakis's target regions.[18] In four western counties, for example, 17 percent of the manufacturing job base was lost in plant closings and lay-offs between 1980 and '85.[19]

After months of stalemate over the issue of mandatory notification of plant closings, a handful of the principal commission members from business, labor and government met behind closed doors and worked out a deal. Essentially, labor gave up its demand for mandatory notification in return for increased benefits for laid-off workers. Business in return agreed to formulate a voluntary "social compact" defining standards of appropriate corporate behavior in plant closings including 90 days' advance notice, 90 days of continued health coverage, re-employment assistance for displaced workers, and severance pay. While the business members promised a private sector effort to convince corporations to sign the compact, the state pledged to deny financing from MIFA or the other quasi-public agencies to companies that refused to sign. The state also agreed to set up a re-employment assistance program offering counseling, placement and retraining services to laid-off workers. In certain circumstances – if a company went bankrupt, for instance – the state would underwrite health and severance benefits. And if a company failed to give 90 days' notice, the state would pay for extra unemployment benefits.

Politically, the compromise was an important coup for the Dukakis administration. Labor was pleased, business was relieved to avoid mandatory notice, and with rapid economic growth filling the state's coffers, few complained that the public was essentially subsidizing the deal. Since then, however, neither the business community nor the administration has moved aggressively to market the social compact, and many corporations have not signed it. Nor has the state enacted any sanctions for firms that sign the compact, take money from MIFA or another state agency, and later fail to give notice.

Perhaps the act's major weakness was its failure to create a financial incentive for businesses to give advance notification. Indeed, it did just the opposite. Workers whose companies do not provide 90 days' notice are eligible for supplemental unemployment benefits from the state. Knowing this, firms concerned about their employees often choose *not* to give formal notice. While this helps their workers get supplemental benefits, the absence of notice (unless given surreptitiously, as is sometimes the case) hurts the state's ability to respond with early counseling, training and placement services. (It also exhausted the legislature's allocations of supplemental unemployment benefits halfway through the 1986-87 fiscal year.) A February 1987 report from the state's Division of Employment Security noted that the percentage of employers who gave no notice *increased* from 1985 to 1986. If businesses had to pay for supplemental benefits themselves, they would have a financial incentive to provide early notice – as commission members Robert Reich, Robert Zevin and Joshua Posner pointed out in their comments on the commission report.

Once it had reached a compromise on the plant closing issue, the administration seemed to lose interest in the broader commission mandate to help mature industries. When the Dukakis administration chose to leave the commission's recommendations out of its legislation, Rep. Timothy Bassett, then chairman of the House Committee on Commerce and Labor, put them back in. "I had hoped we would be able to build the skeleton of some kind of reasonable industrial policy," Bassett explains. "We had the trauma of plant closings, but the long term way to buffer and change the economy was to create some different kinds of institutions that could respond over time."

The new institutions included:

- the Economic Stabilization Trust, to provide loans to mature firms that are struggling to turn themselves around;
- a Massachusetts Product Development Corporation, to provide venture capital for mature firms developing new products or processes;
- an Industrial Services Program (ISP), to help dislocated workers and to work with troubled firms seeking to upgrade their production technologies, management, and the like;
- a monitoring group to analyze economic trends within industries and regions, in order to provide the information necessary for intelligent intervention;
- and an Industrial Advisory Board, with members from business, labor and government, to oversee the programs and advise the governor and legislature on issues related to mature industries.

The administration failed to create the kind of quality economic monitoring function called for by the commission, and it took two years to organize the Massachusetts Product Development Corporation. But the Industrial Services Program has performed well. It has set up 46 Worker Assistance Centers in areas where there have been substantial lay-offs – hiring laid-off workers as counselors or outreach specialists, to make it easier for dislocated workers to use the program. ISP claims this has given the program the "highest participation rates in the country." It boasts a placement rate of 78 percent, at 85 percent of previous wages or more.[20]

The Economic Stabilization Trust and Business and Financial Services Program

The most interesting pieces of the ISP package, from an economic development perspective, are the Economic Stabilization Trust (EST) and the Business and Financial Services (BFS) section of ISP, which together form a fledgling industrial extension service and turnaround bank. EST is a $6 million quasi-public loan fund, which makes high-risk, low-interest loans to turn around declining firms in mature industries. Between June of 1985 and August of 1987, EST made 19 loans for roughly $4.4 million. More important than the money, however, is its four-member Business and Financial Services (BFS) staff, which has worked with more than 180 companies over the same period. As former BFS and EST Director William Currier puts it, "The money is the bait that gets people to come to you. But then having the opportunity to give advice is much more valuable."[21]

Currier is a businessman who specializes in turnarounds. Over the 13 years before he came to EST, he had bought, turned around and sold three companies. (After leaving EST in 1987, he bought a fourth.) Adamant that BFS use only experienced business people, he hired a staff with expertise in management, corporate finance, and marketing. By late 1986 they were getting inquiries at the rate of nearly one a day, many from firms that were already insolvent or filing for bankruptcy. The calls came from corporate owners, from managers, from consultants, even from union members. In response to an inquiry, a BFS staff member would try to get to the plant within 24 hours, to begin analyzing the company's problems. After a thorough diagnosis, the staff would suggest a variety of remedies, from new management to new marketing strategies to new products. "We take the attitude that there is nothing that can't be done, until the heart stops beating," Currier explained. "You've got to be creative and innovative, and you can't take no from anybody."

The experience of Savage Arms, a manufacturer of rifles and shotguns near Springfield, demonstrates what happens when the program works. In 1985, Savage Arms was on its deathbed. The plant was operating with a skeleton staff. Its major bank, Fleet National, was about to call its loan. Two other local arms manufacturers had filed for bankruptcy, making other banks extremely reluctant to lend. "There was an incredible list of problems," says Currier. "Potential pollution problems, an IRS suit, a Department of Revenue suit, a potential suit against the accountants, the messiest situation you ever saw."

Currier and his staff worked closely with the firm for a year – analyzing their problems, trying to convince bankers to make loans, talking with potential investors. Eventually the firm found new investors. Over a five month period they, Currier, and Fleet National Bank worked out a deal. Currier insisted on a series of conditions, including new management. When they were met, both EST and another of the state's quasi-public finance agencies made loans. A year after the buy-out, Savage Industries – as it has been renamed – employed 400 people and was aiming for sales of $25 million a year. "The company is profitable, the jobs are secure, and the volume is up," Currier reported.

EST's purpose – to save companies on the verge of collapse – takes it further out on a limb than any of Massachusetts's other quasi-publics. A November 1986 report explained its philosophy:

> While we know some of our loans are bound to fail because they are high risk, we analyze the financial contributions of the work force, the local community and the Commonwealth's revenues which the companies make by remaining in business for an additional six months to one year. If we feel the contributions outweigh the amount of the loan and that there is a reasonable chance of the loan being repaid, we lend the funds. Obviously, this is a risky and difficult business.

Unfortunately, the Mature Industries Commission failed to insulate EST from political pressures, which makes its investment strategy even riskier. The five-member EST board, which makes all lending decisions, is appointed entirely by the governor; it includes both the secretary of economic affairs and the director of the executive office of labor. EST is dependent for its funding on annual appropriations from the legislature, unlike the previous generation of quasi-public agencies. This gives legislators enormous leverage when they want a loan for a company in their district.

In its second year, the board bowed to political pressure and loaned $1.5 million – a third of its entire portfolio – to a company it had originally turned down. Nine months later, the company announced that it was closing anyway. This was the mirror image of the Savage Arms story, a poignant example of what can go wrong when public investment funds are not well enough insulated from politics.

The firm, Morse Tool Company of New Bedford, was an important employer in a depressed community. It had been the beneficiary of a long struggle by its union and the local community to keep it alive – including a threat by the mayor to seize it by eminent domain when Gulf & Western, its former owner, announced plans to shut it down. Its supporters had become extremely adept at pulling political strings.

When the EST board first turned down Morse Tool, a local union official immediately went to the governor's office. A state representative from New Bedford had already introduced legislation for a special appropriation of $1.5 million. With the union mounting an effective lobbying campaign, the legislature voted the special appropriation and the board reversed its decision – against Currier's recommendation. When the owner refused to implement one of Currier's principal conditions for the loan – that he hire an experienced turnaround specialist to manage the situation – the board again relented.

Unlike the Adams Print Works loans at CDFC, however, all EST loans are personally guaranteed by the company's owner. This guarantee gave EST enough leverage to force the owner to look for a buyer for the company, rather than simply selling off the plant and equipment. When he received bids form two companies, the Dukakis administration urged the bankruptcy judge to choose the firm that planned to keep the pant open, even though it had offered at least $100,000 less than another bidder. The judge agreed, and EST rolled over its loan to the new owner. At this writing, then, EST has once again saved 375 jobs in New Bedford – showing just how resourceful government can be in this kind of situation.

Morse Tool's new owners may be able to turn the company around. Even if they do, however, EST has set itself up for pressure from every legislator in the state. Eventually, political pressure can kill a program like EST. Before Morse Tool closed, three out of 16 EST loans had gone bad. EST had been repaid on one of the three during bankruptcy proceedings, and total losses were only about $200,000. The program is expected to incur losses at this level, but more experiences of the Morse Tool type could prompt the legislature (or a new governor) to take a second look. Precisely that happened to a much larger program in Alaska, the Alaska Renewable Resources Corporation. Dependent on biannual appropriations from the legislature, it invested more to prop up failing firms than to seed new industries – its ostensible purpose. When the losses piled up, it was shut down.

EST is too valuable an experiment to suffer the same fate. It offers a vivid example of the wrong way to structure a public capital fund. State governments should provide enough capital for a fund to operate for five to ten years, then get out of the way. They should also make sure appointments to the board are spread out between the governor, the business community, and labor.

Cooperative Regional Industrial Laboratories

Another program funded by ISP deserves mention: a small, experimental effort called the Cooperative Regional Industrial Laboratories (CRIL) program. Launched by the Executive Office of Labor (EOL), it was designed to involve dislocated workers in economic development efforts to revive their communities.[22] "The basic idea was that nobody pays any attention to what the workers know in these situations," explains Michael Schippani, the former EOL staff member who initiated the effort. "We thought they ought to be at the table. I want the workers involved in decisions about where their industry is going."

In the Greenfield area of western Massachusetts, where there had been a series of lay-offs in the machine tool industry, the project funded a joint effort of a group of dislocated workers and the Franklin County Community Development Corporation. Calling themselves the Machine Trades Action Project, they surveyed the skills of the work force and found that a third of the workers expressed an interest in starting their own businesses. As a result, they tried to get funding for a small business incubator, and they helped launch an entrepreneurial training course offered by ISP's local Workers Assistance Center. They also brought in engineering professors from the University of Massachusetts at Amherst to help local machine shops upgrade their technology and hired a local businessman to market their products.

In Fall River, a similar Needle Trades Action Project initiated a new training program, hired an engineer to work with local companies to upgrade their technology, put together marketing campaigns, brought new contracts to Fall River, and functioned as an informal early warning system to alert state and local officials when firms are in trouble.

Both of these were creative efforts, with significant potential. But because they were not part of a larger administration strategy, they had little access to significant resources or state programs. When the Machine Trades Action Project decided the Greenfield area needed an incubator, there was no state incubator program to which it could turn. When it wanted to bring engineering professors in to work with area firms, there was no state program to fund such efforts. Given these obstacles, CRIL's significance probably lies less in its specific accomplishments than in its demonstration that workers can contribute a great deal to local economic development programs – if they are included.

CRIL's fate demonstrates the importance of creating a comprehensive economic development system, as opposed to a series of innovative but uncoordinated economic development programs. CRIL and efforts like it would flourish if a system existed through which the administration could build on their accomplishments. Consider, for instance, the potential of a system made up of a economic development centers in each of at least six regions. These centers could coordinate virtually all of Massachusetts development efforts. They could act as windows for the quasi-publics; they could house staffs for the regional Centers of Excellence; they could sponsor small business incubators; they could create a technology transfer or industrial extension service programs, to work with small and medium-size businesses. The state could move its Jobs Training Partnership Act (JTPA) staffs and its small business assistance centers into the regional centers. One could even imagine adding an entrepreneurship training program to work with people who operated or wanted to start a small business, a regional labor-management committee to promote workplace restructuring along more cooperative lines, or a program to assist worker buy-outs and worker-owned firms.

Under this kind of arrangement, local groups such as the CRIL projects in Greenfield and Fall River would have access, through the regional economic development center, to all state resources. Those involved in any local initiative would know exactly where to go to get help – on the local level. Similarly, local business people would have access to virtually every economic development tool offered by the state, simply by walking in the door of their original center. Those who came in looking for capital but also needed entrepreneurship training and incubator space, or those who came in looking for incubator space but could benefit from contact with a local professor with expertise in their area of technology, would be referred to the right people. To ensure that the centers were tied into local resources and efforts, their boards could be made up of local business, labor, government, academic and community representatives.

The Dukakis administration has proposed a reorganization that would take a small step in this direction. To suggest that it do more may seem utopian. But as we shall see, major portions of the system outlined above are already working in Pennsylvania.

The Impact of Massachusetts' Economic Development Programs

What impact have the state's programs had on the economy? This is difficult to quantify. There is no objective way to disaggregate the effects of government programs from the other variables operating to influence economic growth. Moreover, progress in economic development must be tracked across decades, not years. Many people credit Dukakis for Massachusetts's turnaround, because he was governor when it happened. The reality is more complex.

Massachusetts' period of rapid growth began in 1976 and '77, before the Dukakis programs were in existence (and, by the same token, before Proposition 2 1/2, to which conservatives often credit the boom). The engine behind that growth, as nearly everyone knows, was technological innovation. Between 1975 and 1981, high-tech firms generated 81 percent of the manufacturing jobs created in Massachusetts. Although multiplier effects vary from region to region, one rule of thumb says that every new manufacturing job generates two other jobs else where in the economy. Computer-related services grew even faster than high-tech manufacturing.[23]

Many of these high-tech industries were born in the 1950s. During and after World War II, the Defense Department funded the development of one of the world's first computers – appropriately named "Whirlwind" – at the Massachusetts Institute of Technology. A generation of graduate students cut their teeth on Whirlwind and its successors, then left academia to create the hardware and software companies that have made Route 128 famous. When MIT Professor John Donovan studied 216 high tech companies in the greater Boston area, he found that 156 of them had been born in MIT departments or laboratories.[24]

Credit must also go to the pioneers of venture capital, particularly the founders of American Development and Research, the nation's first venture capital firm. Other factors included a concentration of quality higher education institutions and an attractive quality of life. Defense spending continued to play a role as well: when it declined after the Vietnam War, Massachusetts fell into the worst recession of any industrial state; when it doubled under Reagan, the state's economy shifted into overdrive. (It is worth noting that high taxes, which prevailed before Prop. 2 1/2, did not prevent the boom.)

When pressed, Dukakis administration officials admit that they have had little impact on overall growth rates in the state. They do claim credit, however, for creating changes in the regional patterns of growth: the success story in Lowell, the emerging growth of southeastern Massachusetts and the Worcester area, the revitalization of many older urban cores. Again, the claim is difficult to evaluate. New industry is clearly moving into southeastern Massachusetts, but a few miles away in Rhode Island – where the Dukakis programs are unavailable – a nascent boom is also underway. Similarly, Manchester, New Hampshire, not far from Lowell, now has the lowest unemployment rate of any American city.[25]

Logic suggests that much of this growth is a product of the same regional boom, which has gradually radiated out from its hub in Boston. Within this regional economy, Dukakis has no doubt brought investments into communities that would otherwise have been avoided by the private sector. Despite the limitations of his strategy, he has had a visible impact on cities like Lowell and Taunton. But travel further than an hour away from Route 128 and the success stories fade – suggesting that much of the credit must go to the Boston regional economy. Dukakis has certainly helped areas like the Northern Berkshires, but he could have done far more had he taken a more pro-active, systematic approach.

After a decade of ad hoc experimentation, Massachusetts has the rudiments of a first rate economic development system. The task now is to re-evaluate, redesign, and reconstruct. In a way, Massachusetts suffers from having been first. When Dukakis and his staff hammered out their basic approach, there were few models in other states from which to learn. Ten years later, many of their programs have been in effect long enough that both their strengths and weaknesses are conspicuously evident.

This maturity creates enormous opportunities, however. Massachusetts has so many tools in place and so much experience with economic development in poor communities and declining regions that it is perfectly positioned for a major step forward. By reexamining its programs and then carefully forging them into a coherent and comprehensive system, it could take the effort to create growth in poor communities to a level never before achieved in this country.

CHAPTER III:
PENNSYLVANIA

In 1979, when Republican Governor Richard Thornburgh took office, the shoe had begun to pinch in Pennsylvania. The state had lost 175,000 manufacturing jobs in the seventies. Its unemployment rate was the seventh highest in the nation. Per capita income had fallen below the national average. And the worst was yet to come: between 1978 and 1985, the steel industry would lose nearly 50 percent of its 200,000 jobs, while steel production would fall 57 percent. As a group, the state's 40 largest corporations would eliminate 600,000 jobs – *half* their 1979 total. In January 1983, as Thornburgh began his second term, unemployment would hit 14.9 percent.[1]

Thornburgh had vowed to make economic development his priority. Unlike most governors, however, he decided to commission an in-depth study of the state's economy before he launched any new programs. Called *Choices for Pennsylvanians*, the study took two years and solicited input from citizens in meetings throughout the state. It then served as the "polar star," to use Thornburgh's phrase, which guided all of his administration's efforts.

To staff the Choices process, Thornburgh chose his Office of Policy and Planning, which was run by a young midwesterner named Walt Plosila. Plosila spent four years directing the policy office, then moved over to the Commerce Department, where he implemented many of the new programs he had designed. During his eight years in the administration, Plosila dreamed up 90 percent of Thornburgh's economic development initiatives. His creativity and blunt persistence earned him respect from both sides of the aisle, something rare in Pennsylvania's legislature.

During the seventies, Pennsylvania had relied on smokestack-chasing as the heart of its economic development strategy. It had in fact won the premier smokestack-chasing prize of the seventies, a Volkswagen Rabbit plant – in the process depleting its principal loan fund, the Pennsylvania Industrial Development Authority, for several years.[2] But early in the *Choices* process, Plosila came across David Birch's research on the role of new and small businesses in job creation. He checked the data for Pennsylvania and found that large corporations were contracting so rapidly that *all* net new jobs in the state were being created by small firms.[3] Relying on Birch's evidence about the insignificance of corporate relocations, the Choices study rejected smokestack-chasing and stressed the importance of new and small businesses. It recommended that Pennsylvania seek to modernize its existing manufacturing base and diversify its economy, particularly through the growth of advanced technology companies. It also called for new partnerships between the public and private sectors, as well as between state and local governments.

Based on the *Choices* report, the Thornburgh administration reversed the state's traditional economic development priorities. Its top priority became the modernization and growth of existing businesses; its second became the birth and expansion of new businesses; and in third place came the selective recruitment of new firms, particularly in advanced technology industries.

Thornburgh's first wave of efforts, undertaken while the *Choices* process was nearing completion, focused on small business. The administration convinced the legislature to simplify and lower small business taxes. The Commerce Department set up a Small Business Action Center to help businesses deal with red tape, permits, and the state's various bureaucracies. The administration put up a small matching grant to secure 13 Small Business Development Centers funded primarily by the SBA, to provide technical and management assistance. And the governor won passage of legislation to amend the powers of the Pennsylvania Industrial Development Authority (PIDA), which made long-term, low-interest loans to industry for land and buildings. Once devoted almost exclusively to large manufacturing corporations, by 1984 half of all PIDA loans went to businesses with 50 or fewer employees.[4]

The Ben Franklin Partnership

Among Pennsylvania's greatest strengths, the *Choices* report noted, were its universities and its reservoir of technological expertise. Pennsylvania graduated more engineers than all but two other states. It had four universities among the nation's top 50 graduate research institutions, with expertise in robotics, computer-assisted design and manufacturing, electronics, computer science, and advanced materials. It ranked fifth among the states on three related measures: the number of scientists and engineers in the state, the number of workers employed in advanced technology industry, and the amount spent on research and development. But the state had failed to capitalize on these assets. The kind of interaction between business and academic institutions that had kicked off explosive growth in Massachusetts and in California's Silicon Valley was missing in Pennsylvania. Thornburgh and Plosila made the creation of that kind of environment their primary goal.

The vehicle was the Ben Franklin Partnership, designed primarily by Plosila and passed by the legislature in 1982. The Partnership is essentially a matching grant program. The heart of the program offers "Challenge Grants" to university-based projects funded by businesses – primarily applied research projects. The idea is to provide a carrot to get industry and academia interested in working together on research that might result in a marketable (or improved) product or process.

Several years ago, for instance, a professor of biochemistry and biophysics at the University of Pennsylvania, Britten Chance, developed a new type of nuclear magnetic resonance machine that performed a specialized form of brain and body scan. It could measure the brain metabolism of premature infants; it could diagnose peripheral vascular disease (such as hardening of the arteries) in adults; it could even evaluate the level of physical conditioning achieved by an athlete. Chance launched a company and poured his own money into it, but finally reached his financial limits. He then applied to the Ben Franklin Partnership, which responded with $330,000 in research grants over three years. In 1986 the firm, Phospho-Energetics, Inc., raised $4 million in venture capital. "In five years time," says its president, Roger Wheatley, "we would hope to be a $100 million medical instrument company. Without the Ben Franklin Partnership, this company would not have been commercialized. It's the perfect example – this technology exists at the university, and the state provides some money to get that technology out of the university, into the marketplace."[5]

While the majority of the research projects involve young, entrepreneurial companies, many also fund efforts to help older firms adopt new technologies in order to remain competitive. When the Partnership was created, a debate raged among advocates of industrial policy over the wisdom of targeting sunrise versus sunset industries. Wisely, Plosila and Thornburgh chose to target both. To underscore their commitment, they adopted the term "advanced technology" rather than "high technology." "What we see in advanced technology is not simply another Silicon Valley," explains Thornburgh. "We see new technology clusters emerging, but of equal importance, we see the spinning in of new technology into our traditional industries."

In addition to research, the Partnership also awards Challenge Grants for education and training programs and for entrepreneurial development activities again requiring a private sector match. Examples of the former include programs to train public school teachers in computer literacy; a center to train industry personnel in computer-assisted design; and internships in industry for vocational education instructors. Examples of the latter include feasibility studies for small business incubators; technical assistance for small businesses; efforts to start "enterprise forums," in which local venture capitalists meet regularly with entrepreneurs who need risk capital; and grants to Small Business Development Centers.[6]

The program is operated through four Advanced Technology Centers (ATCs), each in a different region of the state. Each center is affiliated with a major university or universities, but every higher education institution in the region is eligible for grants. Each center focuses on two to four technology areas, depending upon the economic strengths of local universities and the region. They include robotics; advanced materials; computer-aided design and computer-aided manufacturing (CAD/CAM); microelectronics; biotechnology; biomedical technologies; sensor technologies; manufacturing in space; food and plant production processing; and coal and mineral production and processing. A board made up of regional leaders from academia, business, government, and economic development organizations oversees a staff of 10 to 20 at each center.

Rather than imposing a model on each region, the state allowed each board to craft its own design. Predictably, several of the universities assumed that they could use the money as they would any other research dollars: to finance basic research of interest to their faculty. During the first year, the central Ben Franklin board rejected both Penn State's and the Philadelphia center's proposals and sent them back to the drawing board whereupon a state legislator from the Penn State area tried to have Plosila fired. To force the centers to focus on projects of value to business, the board decided to make them compete with one another for funding, based on the commercial potential of their projects.

The process works like this: every spring each center submits a package of applications for Challenge Grants, which the state board rates according to criteria such as potential commercial application; number of jobs created; size of the company (there is a bias toward small firms, on the theory that large corporations do not need as much state help); number of colleges involved in the proposal; and quantity and quality of the private sector match. The rating system also ranks the centers according to how well their past projects have done on measures such as job creation, corporate match, and attraction of venture capital. Centers with higher average ratings get more money. They can then divide their allocation up as they wish providing smaller grants for some projects than originally proposed, for instance, to make the money go further. Though a few grants have been in the $300,000 range, most end up under $100,000.[7]

In its first four years the Ben Franklin Partnership funded close to 1,500 projects, which involved 128 of the state's 135 higher education institutions and 2,500 private firms. With its $77 million in Challenge Grants, the state claimed to have leveraged $281 million in other investments, the majority of them from private industry. According to the Thornburgh administration, this made the Ben Franklin Partnership the largest and most highly leveraged state technology program in the country.[8]

While Challenge Grants remain the heart of the Partnership, the Thornburgh administration and the legislature have added a series of other programs over the past four years. For instance, businesses that are too small or too new to invest the time and money required by a joint business-academic project can apply for Small Business Research Seed Grants of up to $35,000 a year. This program was created in 1983 to make sure that any company, no matter how small, could take advantage of the Partnership.

A second new program, created in 1984, provides $17 million for loans to small business incubators. At that time, Pennsylvania already had the most extensive network of incubators in the country; by mid-'86, the Partnership had assisted 27 incubators, providing $4.2 million in Challenge Grants for feasibility studies and services to incubator tenants and over $1.5 million in loans. (PIDA had loaned another $1.7 million to incubators.)[9] In 1986 the program was amended to allow grants as well as loans to incubators in distressed communities.

Early experience with the Partnership and with the incubators underlined how little venture capital – particularly seed capital – was available in Pennsylvania. To address this problem, a third initiative allocated $3 million for seed venture capital funds, to be linked to the Advanced Technology Centers. The state put together four pots of $750,000 each and offered them to private venture capitalists who would match them with at least $2,225,000 each and use the total for seed capital investments in the region. Each Advanced Technology Center "invested" the money as a limited partner in the fund, and will use its share of the profits for more Challenge Grants. A second round of financing added another $1.5 million, divided between two of the original guarantees and a new fund, in Pittsburgh.[10]

The North East Tier Advanced Technology Center

Perhaps the best way to understand the Ben Franklin Partnership is to take a close look at one of its centers. The North East Tier Advanced Technology Center, at Lehigh University, is often considered the best of the four – although in 1986-'87 it placed second in funding, behind the ATC of Southeastern Pennsylvania. With a strong engineering school, Lehigh has long encouraged professors to work with local businesses, even to start their own companies, and Lehigh professors were quick to capitalize on the new program. Lehigh's location in Bethlehem is also apt; Bethlehem was once a booming center for coal mining and steel production, two industries that have all but died in the region. As Bethlehem Steel retrenched, and Mack Truck moved much of its production south, manufacturing employment in the Bethlehem-Allentown-Easton area fell from 107,000 in 1980 to 78,000 in 1986.[11]

The region's history as a major industrial center has shaped the ATC's approach. "Our first priority is to help the existing industries be competitive," said former director Michael Bolton in 1984. "That's why we call our program advanced technology, not high technology. We think the biggest users are going to be the traditional firms."[12]

The North East Tier ATC spends 60 percent of its $7 million annual budget on applied research grants, funding roughly 50 projects a year. Examples include research and development on software for automated manufacturing; automated work cells for industry; a new recreational vehicle; a new process for recycling tires; a digital vision system to provide quality control in manufacturing; a new design for industrial furnaces, allowing them to burn the region's high-sulfur coal; a process to create better visual images of tumors in nuclear magnetic resonance spectrometers; a computer-aided design process for cosmetic bottles; and the introduction of computers to monitor the flow of paper through a large press.[13]

One of the biggest success stories is a firm called Polymer Dynamics, which produces shock-absorbent footwear, gloves, and headgear inserts, as well as industrial vibration dampeners and related products. Run by Bill Peoples, a former car dealer, Polymer Dynamics parlayed a $150,000 grant from BFP into several million dollars in venture capital and a plant that employs almost 100 people. "I met Bill Peoples in the local high school gym," remembers Lehigh President Peter Likins, who tells the story well.

> His kid's a wrestler, my kid's a wrestler. His kid was having trouble with his knees, and Bill was complaining about the knee pads, shaking his head because they just didn't seem to make a knee pad that was compact enough so that it wasn't an impediment to the athlete's motion, but properly protected the knee from the impact of colliding with the mat.
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> Bill had been a car dealer and sold his facility, and he was hanging around the gym. He started talking to people, and he had this bright idea that he could make a better knee pad. He got some polymer products and he got one made up, and he was going to go into the knee pad business. Then the Ben Franklin program became visible to him, and he thought, 'Aha, I'll go over there and get some of those professors, who must know something about polymers, to give me a hand.'
>
> So he connected with the Ben Franklin program, and he found that his polymer formula was nonsense, but that there was expertise on this faculty in polymers that would enable him to devise a product that had the resilience without the bulk that he was looking for. He did design a good knee pad – he's selling them all over the country – and the knee pad led to all kinds of shock absorbers for athletes, shoe inserts, and now shock absorbers for machines. He's got a plant in the Lehigh Valley Industrial Park, he's negotiating to buy one of the buildings from the steel company, down here in South Bethlehem, he's negotiating with the Koreans for a shoe deal, and he's got serious money from New York venture capital interests. The guy

is just exploding. That's an example of something that probably would not have succeeded if Bill hadn't coupled with the faculty. He didn't succeed because Ben Franklin put money into his operations, but Ben Franklin provided for him the linkage to the faculty, and provided the faculty a mechanism for working with this crazy car dealer who was trying to start a polymer plant.[14]

The Lehigh center's second most important area is technology transfer and education. The center funds seminars and workshops on new technologies for industry people. When a company requests specific help, one of the ATC staff takes a look and assigns it to a school. Sometimes it is just a matter of a few days of consulting; at other times the company ends up proposing a Challenge Grant.

Perhaps the most active participant is Lehigh's Computer-Integrated Manufacturing (CIM) Laboratory, which works with about 25 companies a year, on projects that receive about $2 million in BFP money. The CIM Lab sponsors short courses for industry people intensive, five-day seminars on the latest CAD/CAM technologies, for instance. But most of its BFP-funded projects send teams of faculty and students into plants to examine production processes and help companies adopt new technologies.

These projects range from simple efforts to create networks through which all the computer-driven machines in a plant can communicate, to complex, year-long campaigns to redesign entire factory floors. According to Lab Director Emory Zimmers, a Lehigh professor, most large companies can afford these services on their own. But with matching grants from the Ben Franklin Partnership, small and medium-size companies can afford the lab's services as well.

One typical client makes a sensing device used to measure pressure or meter the flow of material in a manufacturing process. Over seven years its plant had shrunk form 3,500 employees to about 700, as foreign competition ate into its markets. To keep the plant open, the firm desperately needed to get its costs down. With a $200,000 Ben Franklin grant paying for about half of the R and D work, the CIM Lab sent a team of people in to design a new production process with 18 robot cells (each cell consisting of one or more robots, plus attached equipment), all linked by computers. The CIM engineers tested the design of the robot cells, as well as the design of the entire factory, through graphic simulation on computers. By the time half the robot cells had been installed, the firm had driven its cost per unit below those of its competitors.

These projects not only help individual companies, they also help the engineers involved advance the frontiers of factory automation. "Without these applied research projects," says Zimmers, "there's no proving ground for new, innovative ideas. We really do both at the same time when we're doing the short-term project, we are also interacting with the factory and creating new ideas about how factories should run. The factory is our laboratory."[15]

The North East Tier ATC's third focus is entrepreneurial assistance. Its staff played a role in creating the region's new seed capital fund, which is now housed in its building. It also runs one of the only "product development" incubators in the country – an incubator that is limited to start-up firms involved in creating new products. The incubator occupies one building out of eight in a vast research complex that Lehigh University recently bought from Bethlehem Steel, which had been vacating space as it trimmed its research staff. (The state contributed $10 million to make the purchase possible.) The university plans to expand the incubator into two or three buildings and use others for a corporate research park.

With ten tenants, the incubator offers space at far below market rates. It also provides a free conference room, free computer and computer-aided design facilities, shared secretarial services, a photocopy machine, and access a group of legal, accounting, financial, marketing and insurance firms that come to the building and offer free consulting. An ATC staff member with decades of business experience has an office in the building and provides technical assistance of many kinds.

The first generation of tenants spanned a fascinating spectrum of advanced technologies. One wrote computer programs for industrial clients. Another developed the first non-toxic paint stripper on the market. A third developed a new trap for bag worms, which are difficult to eliminate with chemical pesticides. A fourth wrote software for large clothing manufacturers that were adopting computer-integrated manufacturing systems. And a fifth did biotechnology research to develop new methods to clean up hazardous materials.

For Al Austen, the incubator provided the push he had long needed to leave Bethlehem Steel, where he was a research engineer, and start his own company. Called Innovare, Austen's company does contract research on advanced materials – metals, ceramics and polymers – for manufacturing firms. Austen uses super-cold processing of metal powders to create alloys with qualities that cannot be obtained under traditional hot processes – a combination of strength and flexibility, for instance, or resistance to corrosion, or conductivity. With ceramics, he works with high temperatures and pressures to produce superior products. In the course of his research, he and his team also developed a programmable, computer-controlled hydraulic press, to extrude (shape) both hot and cold materials. Innovare began selling small versions of the press in 1987, while developing a marketing plan to sell to large manufacturers.

"Our market niche is to serve the sophisticated, rapidly solidified, powdered metallurgy industry – composites, new deformable ceramics, and so on," Austen says.[16] "For those operations you need a new generation of processing equipment, and that's what we see our role as providing." Because this niche is on the cutting edge of new technologies, Innovare has little competition and boundless potential. In 1987 it had six employees. "We could be three or four times as big today if over the last six months I'd been three or four people, and been able to simply answer requests," Austen said. If he succeeds in selling large hydraulic presses to industry, he will build a factory in the area.

By early 1987, Innovare had received two BFP Seed Grants of $35,000 each, while researchers at Lehigh with whom Austen had contracted had received close to $80,000 in Challenge Grants. (Austen matched those grants with about $250,000 of Innovare money and equipment.) Without the Ben Franklin money, Austen says, he would not have undertaken the joint research projects with Lehigh: "It wouldn't be affordable. That's part of the feature of the program to make technology affordable to the small company."

Ron Thomas, the founder of Polar Materials, Inc., also got an invaluable boost from the incubator and the Ben Franklin Partnership. But Thomas points out the program's limitations as well. While the Lehigh ATC was instrumental in PMI's research and start-up phase, it was not terribly helpful when it came to teaching a scientist how to manage a rapidly growing business. "We were very naive as businessmen," Thomas says. "And the kind of problems that come up in all these companies are very similar. You're dealing with very, very bright people who are technically trained but who don't understand the business side."[17] Because the ATC relied primarily on academic people for technical assistance, it was of little help. Thomas's solution was to bring in a partner with a strong business background.

The Western Pennsylvania ATC, in Pittsburgh, has developed an interesting solution to the problem Thomas describes. It subsidizes several institutions that provide intensive business assistance, from experienced business people, to firms like Innovare and Polar Materials. One, called The Enterprise Corporation, has four senior staff people with graduate degrees and extensive business experience. They sort through 150-odd business plans every year, pick 10 to 15 of the most promising, and go to work – helping entrepreneurs restructure their business plans, raise venture capital, find partners for joint ventures, do market research, develop marketing strategies, and so on. Typically, they spend six months to a year working closely with a company – and some firms come back later for another round.

The Enterprise Corporation does this work for free. Occasionally, to make sure a firm genuinely needs its help, it asks for a small equity stake in the company. The firms are generally too young to afford any other form of payment. "No one could make a living doing what we do for fees," says Thomas Canfield, president and CEO of the corporation. "We figured out one year that the average salary of the heads of the companies we had helped was $14,000."[18]

Canfield and his colleagues also sponsor a bimonthly forum in which firms present their business plans to venture capitalists and a Software Entrepreneurs Forum, in which over 120 software firms meet quarterly to address issues specific to their industry. They hold conferences, seminars and an annual venture capital fair that attracts dozens of venture firms from outside the region. And in 1985 they put together the Pittsburgh Seed Fund, one of the five regional seed funds that received BFP money from the state.

Another local organization partially funded by the BFP is the Pittsburgh High Technology Council (PHTC). PHTC sponsors publications and studies to document the growing high tech presence in Pittsburgh, as well as conferences and meetings to build the network. It runs a CEO Network, for instance, through which local CEOs act as mentors for start-up firms. That group has in turn created a $10 million CEO Venture Fund, for second- stage venture capital. In 1986, the Ben Franklin Partnership offered it $625,000, which the fund matched three-to-one, to create a subsidiary fund targeted at seed capital.

Evaluating the Ben Franklin Partnership

The Ben Franklin Partnership is probably the most comprehensive economic development institution in the country. If an entrepreneur needs inexpensive start-up space, Pennsylvania has 30 incubators, more than any other state. If he or she needs technical assistance, each center offers several options. If research is the problem, Challenge and Seed Grants are available, or the ATC staff can help the firm apply for a federal grant. If capital is the problem, both seed and traditional venture capital funds are available. If the company needs debt rather than equity, the ATC can refer them to local bankers who specialize in their area, or the right state or regional loan fund. If an older company needs new technology to survive, teams of experts are available to help. "One thing leads to another," explains Walt Plosila. "We're trying to build the kind of informal network you see in places like Route 128 and the Silicon Valley."[19]

Equally important, these services are available locally. A business person does not have to travel to Harrisburg to deal with any of them. In fact, a business person is hardly aware that he is dealing with a state program. Most of the services – the research, the technical assistance, the analyses of production processes, the venture capital – are not provided by state programs. The state simply offers a carrot, a matching grant, to help business people use academic resources, or create seed funds, or finance incubators, or provide technical assistance. Once those resources are in place, the ATCs essentially operate sophisticated referral services. The object – as it should be – is to change private sector behavior in ways that stimulate innovation and productivity.

The Partnership might have been even stronger had the legislature passed a Technology Assessment Program proposed by Thornburgh in 1986. The idea was to provide more money ($6.25 million in the first year) for the kind of work Emory Zimmers' laboratory does with Lehigh Valley manufacturers. Pennsylvania already had a program, which dated from the 1960s, through which eight "technical specialists" at Penn State campuses helped small businesses with information and referrals to university or private-sector consultants. But Thornburgh's new Technology Assessment Program would have gone much further. It would have provided on-site consulting, low interest loans for the purchase of new equipment, and hands-on assistance in integrating that equipment into production lines and training workers to use it.

Supporters of the Ben Franklin Partnership argue that the proof of its value is the amount of money that business has put into Ben Franklin projects. In the program's fifth year of operation, private corporations matched $26.45 million in Challenge Grants with roughly $20 million in cash and $48 million in equipment, laboratories, stall time, and the like. (Another $40 million came from other sources, including the universities, the federal government, and foundations.)[20] "Those folks wouldn't be putting their money on the table if it wasn't working for them," says Lehigh President Peter Likins.

BFP enthusiasts also note that firms receiving BFP grants attracted $61.4 million in private venture capital during the programs first four years.[21]

"This is not something we thought about that much when we designed to program," says Plosila. "But a lot of venture capitalists see us as an imprimatur, because we're turning down three projects for every one we fund, and we have review committees at each of the centers. It's a fairly selective process, so we're doing some of the weeding and screening for the venture people. You have to look at this in perspective. In 1983 there was $31 million raised in Pennsylvania in its entirety for venture capital, and I'm sure most of it went out of state. Then along comes Ben Franklin, and we've got $61 million in our projects from venture firms all across the nation, all in Pennsylvania."

The Ben Franklin Partnership is also designed to change academia. "The program is a success as a culture transformer," says Likins. "It creates a different kind of environment in universities. In 1982 perhaps 25 percent of the research money coming to our faculty was from the private sector, and 75 percent was from the federal government. The federal money has grown, but the state and private sector money is growing much more rapidly together they now fund half of our research activity. That's a real shift because the state money is not coming in here to finance a faculty member's exploration of the inner workings or their personal curiosity. It's coming in here to finance a faculty member's pursuit of a concern that has its roots in some company."

Initially, adds Professor Zimmers, some professors at Lehigh feared that the program would move academic research 'too much from the 'R' to the 'D.' But in reality it helps to focus the research on more critical issues, both long and short term. People who don't have any contact with industry tend to create a cure for no known disease. They mask that by saying, 'Well, I'm 20 years ahead of my time.' In reality, their time never comes."

Another intangible factor is the program's role in mobilizing local business, academic and government people to work together in new ways. By requiring the involvement of many players in local boards and consortia, the state has attempted to generate a process that will gather momentum on its own. Because it has allowed these local players to shape each center to fit the region, it has succeeded in very different environments.

The program is not perfect. Not all the centers are equally vital, for instance. Because of the rural nature of its territory and its lack of historic orientation toward the private sector, the Penn State center has lagged visibly behind the others. Conversely, the other centers could profitably use double the money they now get, because they each turn down as many solid proposals as they accept.

Critics argue that some of the centers have become too dominated by the universities. Ron Thomas, who now sits on the local board which oversees the Lehigh ATC, feels that Lehigh University has gained effective control of the program. As a result, he says, the research money is too directed toward academic interests, and participating businesses are suffocating in red tape and bureaucracy. "Right now I've got one university (BFP) grant, and if I want to expend over $100, I have to have five signatures," Thomas says. "That would take me at least six weeks to two months. You fall into the bureaucracy of the university, and it prohibits you from accomplishing anything."

Thomas also points out that the universities have refused to give up their patent rights on any research their professors conduct. Companies sponsoring the research have to sign licenses to use the results. Because of this, "as soon as a company like ours gets into any kind of position of financial strength, it cuts off that university research, because they're not about to share their patents with a university researcher."

Thomas believes the Partnership would have more impact if 73 percent of its funds went to businesses and 27 percent to academics, rather than the other way around. He points to the incubators and programs like the Enterprise Corporation in Pittsburgh as the real BFP success stories. "I know a lot of people who would like to start a company and can't because they haven't written a good enough proposal," he says. "It's pretty darn easy to write a good proposal if you're at the university. That's what you've done all your life, and you're tapped into all the Ben Franklin people. There's a big buddy system."

Others, such as Peter Likins, disagree with Thomas. But even Likins agrees that the program has one glaring weakness: its use of the number of jobs created by each project as a major determinant of funding. The Ben Franklin Partnership is not designed to create jobs in the short run; it is designed to create new products and processes, to heighten productivity, and to increase the number of start-up companies spun off by Pennsylvania universities. If those goals are met, jobs will follow in the long run. Yet funding is partially determined by short-term job creation, and the public is told that the Partnership is a jobs program.

The dangers are twofold. First, when judged strictly as a short-term jobs program, the Partnership is not terribly impressive. It claims to have created or preserved only 10,664 jobs in its first 48 months. And second, even that figure must be taken with a grain of salt, because it is simply impossible to factor out the impact of Ben Franklin grants on job creation. In most cases the BFP is just one of several investors. In others BFP intervention might destroy jobs in the short run, but save a company in the long run. "We've received a fair amount of money from the Ben Franklin community," says Thomas. "How can I go back and say that money created these jobs? I've got the jobs, I got the money, so if you want to say that this money created these jobs, go ahead guys. That's what's happening."

"I think it is dangerous to put the centers in the position in which they have the impression that the more jobs they report creating or, worse, saving the more money they get," adds Likins. "Because these things are very difficult to document accurately and honestly."

Walt Plosila and the state board recognize these problems, but insist that job creation figures are necessary to get support from the legislature. Plosila also argues that the program errs on the conservative side in counting jobs, if anywhere. Still, virtually the only negative publicity that the Partnership received came when the Philadelphia *Inquirer* traced down two cases of exaggerated job claims in an early press release. (The jobs were not counted in subsequent BFP totals.)[22]

Despite these objections, the Ben Franklin Partnership is recognized throughout the nation as a model program. It is comprehensive; it is decentralized; it catalyzes significant private investment in important economic activities; and it has mobilized major local players in new ways. It is also focused on important targets: the commercialization of research, transfer of technology from academia to industry, the generation of venture capital, the birth of new firms, and the integration of advanced technology into mature industries. Its continued success will depend upon the state board's ability to resist the constant pressure from the universities to use the money for basic research, new buildings, and the like. But the anecdotal evidence suggests that, to a surprising degree, the board has done so. The result is arguably the best single state economic development program in the country.

Pennsylvania's Local Development Districts

Although Ben Franklin projects have involved 128 colleges, community colleges and universities, most of the program's impact has been, and will continue to be, in areas with major universities. For outlying areas, the Thornburgh administration created a second regional economic development system.

In 1981 the Reagan administration tried to do away with the Appalachian Regional Commission and the Economic Development Administration, which were funding seven Local Development Districts in Pennsylvania – regional organizations encompassing 52 of the state's 67 counties. These organizations were essentially consortia of local governments which existed to tap federal grant money. Generally held in low regard by economic development experts, they spent most of their federal money on highway construction and social service programs.[23]

Budget Director David Stockman's attacks on ARC and EDA got Plosila and his staff thinking about the Local Development Districts (LDDs). "We decided if these things were going to survive, they were going to have to be more self-sustaining," Plosila remembers. "We decided either we would make them action-oriented in economic development or get rid of them."

The first step was to reroute the federal ARC money, over which state governments have a great deal of control. Plosila decided to use it to create a new Pennsylvania Capital Loan Fund, for low-interest loans of up to $50,000 for businesses with 50 or fewer employees. The money was designed to be used for "gap financing" – to put in the final amount when traditional bank loans, SBA-guaranteed loans and/or other state loans were not quite enough to make a deal go. Over its first five years, the Pennsylvania Capital Loan Fund received roughly $7 million in ARC funds, $1 million in EDA money, and almost $30 million in state funds. The state also encouraged the local districts to create revolving loan funds of their own (the EDA had also begun to move in this direction), using local government funds, federal block grant money and the like. Some districts now have as many as eight revolving funds, divided between business and housing loans. Finally, the state helped the LDDs secure designation as SBA 503 Certified Development Companies, which allowed them to offer financing through a key SBA program.[24]

The next step was a program to help businesses tap the nation's largest single market: purchases by the federal government. The state provided funds to train procurement specialists, who could help small and medium-size businesses land federal contracts. Next came an export assistance program, along similar lines. Meanwhile, the LDD staffs – some of which are as large as 50 – were developing the expertise to provide more general management assistance.

The Local Development Districts also work with the Ben Franklin Partnership. They refer companies to the Partnership, help write their grant proposals, and at times receive BFP grants themselves. Most of the districts have helped create small business incubators. Several of them function as Service Delivery Administrators under the Job Training Partnership Act, and some have initiated local and regional labor-management committees. Several have also been instrumental in saving local rail lines abandoned by Conrail. One of the LDDs bought and rehabilitated 80 lines of rail, created an independent Rail Authority, and contracted with a short-line railroad company to operate trains on the line. Another helped a private firm buy 100 miles of abandoned lines, which it now operates profitably.

The performance of Pennsylvania's Local Development Districts is mixed. Some have large, professional staffs and have earned the respect of business people throughout their regions. Others are still struggling to make the transition from social services to economic development. Some of their loans go to companies that could not get capital elsewhere; others are simply exploited by firms with plenty of access to private capital, because they want 6-percent interest rates. "If you look at all the portfolios," admits Ivan Tylawsky, who administers the program at the state Commerce Department, "you'll probably find that they cover the entire range. Some are high risk, some are very safe, some are in between."

The LDD loan funds might be more productive if some of them were used to catalyze the creation of private-sector institutions to fill the gap between banks and venture capital. (For the possibilities of such a wholesaling strategy, see the Michigan chapter.) Tylawsky points out, however, that the loan funds do function as a carrot; they give the LDD staffs credibility and bring local business people in to see them. Once a relationship is established, the staff can help in more important ways, with exports or federal procurement or management consulting. Tylawsky also argues that the loan funds have had an impact on local bankers. "Word gets around to the bankers that somebody's loaning money to companies they're turning down," he explains. "It gets them to take a second look. It's a catalyst on the local scene. You're teaching them how to make money on the loans they're turning down, and your staff is doing a lot of the work necessary to make the business succeed, saving the banker a lot of trouble."

Tylawsky believes that the most important thing about the LDD system is precisely that it is a system, rather than a single program. Like the Ben Franklin Partnership, the LDDs provide a wide range of services at the regional level. In the best circumstances, they can provide local business people with financing, technical and managerial assistance, aid in landing a government contract or exporting a product, or access to a job training program. They can refer them to incubators for inexpensive start-up space, or to the Ben Franklin Partnership for research grants, consulting on new technologies they might need to remain competitive, and on down the list.

In addition to being comprehensive, the system is decentralized. Unlike most state bureaucracies the

LDDs are hands-on organizations, whose staff members can make quick decisions. They act as intermediaries between the state and local businesses, delivering services funded by the state but maintaining the flexibility of local institutions. The best ones have enough money to be credible and enough professional expertise to make a difference in their regions. In effect, they play the role of local public-sector entrepreneurs, just as the Ben Franklin ATCs do. This is a role missing in all too many state economic development efforts.

The MILRITE Council

Pennsylvania has long had a reputation as a state with poor labor-management relations. The reality was not as bad as the image, but the image kept manufacturers out of the state. In 1978, leaders of the AFL-CIO and the Chamber of Commerce sat down to discuss the problem. Out of those discussions grew a proposal for a business-labor-government council, funded by the legislature, to work on improving both the state's labor climate and its overall economy. They called it the MILRITE Council, an acronym for "Make Industry and Labor Right in Today's Economy" and a spin on "millwright" – the term for those who built America's mills.[25]

The MILRITE Council began by working to form area labor-management committees and local, in-plant committees – to improve cooperation between labor and management, to heighten labor's role in decision-making, and to increase productivity. The legislature then appropriated $500,000 a year for matching grants to area labor-management committees and asked the MILRITE Council to administer the program. By mid-1987 there were 14 area-wide committees in the state, which had helped launch some 50 in-plant committees.

Thornburgh virtually ignored the MILRITE Council, giving it an annual operating budget of only $200,000, plus $500,000 for grants to Area Labor Management Committees. Today the grants are too small, in many cases, to allow committees to hire even one staff person of the quality needed to deal on equal terms with corporate executives and labor leaders. More importantly, Thornburgh never focused on the issue of labor-management cooperation in speeches, in public appearances, or in programmatic initiatives.

The MILRITE Council also focused on plant closings. After a careful study of the issue, it put together legislation to create a $500,000 revolving loan fund to help workers whose plants were closing study the feasibility of buying the plants. The proposal was expanded by House Democrats into a $15 million program, which included financing for feasibility studies and buy-out loans for both employee and community groups. In part because employee buy-outs need equity rather than debt, and in part because the regulations have scared off many investors by requiring that employees have the right to vote their stock within five years, the money has barely been tapped. In 1986 the administration convinced the legislature to loosen the regulations (allowing grants as well as loans, for instance) and to divert some of the money to other uses.

The MILRITE Council's other major focus has been pension fund reform to fill the state's capital gaps. In 1982 the council hired two consultants to study Pennsylvania's capital markets. After discussions with a wide variety of bankers, venture capitalists, brokers and the like, they concluded that the private sector was unwilling to assume the risk of significant financing in two areas: venture capital (particularly seed capital and funds to purchase and turn around mature firms), and long-term, fixed-rate debt for established manufacturing firms. The Attorney General subsequently ruled that the pension funds did not have the right to make venture capital investments, so the council and the administration worked out legislation that allowed one percent of pension fund assets (or $100 million) to be invested in venture capital.

By July, 1986, the two statewide pension funds had invested $87 million in private venture capital funds. The strategy unfolded in three stages. First, the pension funds invested $30 million in five private venture funds with particular experience in Pennsylvania, each of which agreed to a goal of investing half the money in the state. Second, the pension funds invested in the five regional seed venture funds created to tie into the Ben Franklin Partnership. And third, the pension funds used $40 million as bait to recruit a major national venture firm to create a new Pennsylvania Venture Capital Fund (also with a goal of investing 50 percent of the funds in Pennsylvania).

While Pennsylvania was not the first state to invest pension funds in venture capital (see the Michigan chapter), MILRITE's second initiative to fill the state's capital gaps is unique. It has convinced a group of public and private sector pension funds to put $63 million into a "Private Placement Separate Account," to be managed by Cigna Corp., a large insurance company. Private Placement Separate Accounts are often set up by insurance companies for tax-exempt organizations. In this case, the money will be used to make long-term (up to 15 year) loans of $500,000 to $3 million, at fixed interest rates, to manufacturing firms with sales in the $20 million-a-year range. Thirty percent of the money will go to firms with credit ratings of BA, 70 percent to firms rated BAA. Some BAA-rated companies are able to borrow fixed-rate money from insurance companies, in good times, but most BA-rated and many BAA-rated firms would normally be limited to short-term, variable-rate bank loans.

The Pennsylvania Economic Revitalization Fund

During the 1982 recession, House Democrats in Pennsylvania asked Gail Garfield Schwartz, an economic development consultant (and co-author, with Pat Choate, of *Being Number One: Rebuilding The U.S. Economy)*, to study the state's economy. Garfield Schwartz reached conclusions very similar to those of the *Choices* study. "While traditional industries will still be large employers," she wrote, "the long-run job security and expansion will be in emerging industries. Therefore, Pennsylvania must encourage firm formations, expansion in existing industries, new enterprise, innovation, retooling, and new product development."[26]

The House Democrats then put together a $910 million proposal, to be financed by a temporary increase in personal income taxes. They called it Penn-PRIDE: The Pennsylvania Program for Recovery, Investment, Development and Education. In roughly equal proportions, the new money would have created economic development programs, closed the state's budget deficit, and funded relief efforts aimed at distressed communities and the unemployed. Thornburgh condemned the plan as a traditional Democratic tax-and-spend approach. He argued that it would cost too much, would waste too much money on social services, and would fail to leverage private sector action.[27]

With the unemployment rate remaining in double digits, however, the pressure to do something dramatic continued to build. In early 1984, the governor and the House Democrats compromised on a $190-million bond issue that adopted some of the Democratic initiatives and pumped new money into some of Thornburgh's initiatives. Called the Pennsylvania Economic Revitalization Fund (PERF), the three-year program was passed by the voters in an April 1984 referendum. Some of its elements have been discussed already, including:

- $15 million for employee and community buy-outs;
- $20 million for small business incubators ($3 million of which was later used to capitalize seed venture funds);
- and $15 million in new money for the Pennsylvania Capital Loan Fund, administered by the Local Development Districts.

In addition, PERF provided:

- $3 million for new engineering equipment at universities, which required a three-to-one match from university, business, or other sources;
- $5 million in new money for the Minority Business Development Authority, which provides loans and surety bonds (to insure firms that want to do business with the state, such as building contractors) for minority businesses;
- $50 million for a Business Infrastructure Program, which provides loans or grants to local economic development agencies for infrastructure improvements needed to support business expansions or re-locations;
- $27 million to upgrade equipment in the state's vocational- technical schools and community colleges;
- $15 million to create a Youth Conservation Corps to employ young Pennsylvanians in projects designed to improve public facilities and parks;

- $10 million to provide loan guarantees and interest deferrals on bank loans to family farmers;
- and $30 million to acquire, rehabilitate or develop facilities for public recreation or community services.

Several problems developed with the PERF program. As mentioned earlier, the legislature's regulations governing the incubator and employee buy-out programs restricted their use considerably. In addition, interest rates on loans were tied to interest rates on the bonds, which kept them relatively high. As a result, the Thornburgh administration later funded $105 million of the program with general revenues, and in 1986 it convinced the legislature to amend some of the programs and divert some of the unused funds to other purposes.[28]

Targeting Distressed Communities

While Richard Thornburgh stressed statewide economic development initiatives more and geographically targeted programs less than Michael Dukakis, he nevertheless built preferences for distressed areas into many of his economic programs. The most important such effort has been his enterprise zones program.

Enterprise zones, which have been adopted in some form by at least half the states, originated primarily as a Republican idea. Rep. Jack Kemp popularized the idea, and President Reagan pushed for national legislation. The Kemp-Reagan formula relied heavily on tax breaks as inducements for companies to locate in poor communities.

There are a number of problems with this approach. First, most analysis suggests that tax breaks alone are not powerful enough to overcome the disadvantages of locating in the inner city – crime, poor transportation, and so on. Second, much long-term growth comes from new firms, yet most federal or state tax breaks are useless to new firms, because they generally do not earn profits that can be taxed during their first few years. (This is less true of property tax abatements.) Third, like most tax inducements, those in enterprise zones are indiscriminate. They go to companies regardless of whether they would have located in the target area anyway and regardless of whether they need them; hence they waste money. Fourth, even if a critical mass of businesses were to relocate into a zone, many programs do not require that they hire even a percentage of zone residents. Hence the people government is trying to help might get the increased congestion associated with new businesses, but few of the jobs. Finally, and most importantly, the Kemp formula ignores the complex web of realities – the lack of education and training, the social pathologies, the dearth of entrepreneurial capacity – that keeps poor communities poor.

Enterprise zones remain popular with politicians, because they are easy to pass and administer, and they provide the appearance of doing something. But sophisticated economic development practitioners long ago concluded that if enterprise zones were to work, they would have to build comprehensive local economic development networks in poor communities, tied to broader state and federal resources. In a sense, poor communities need their own versions of Pennsylvania's Local Development Districts, designed to work closely with businesses to ensure their survival and growth and to provide extensive education, training and placement services to poor residents in the area.

It is ironic that while many Democratic governors have created traditional enterprise zone programs, Gov. Thornburgh, a Republican, rejected the tax incentive model. Thornburgh and his staff were convinced by the *Choices* experience that taxes were not major factors in most corporate relocations and that most new jobs came from new and small businesses, not from relocations or branch plants. Having turned their back on the smokestack-chasing model for the state, they did likewise when it came to enterprise zones. Instead they crafted a program that provides matching grants to local economic development partnerships. The administration added a few tax incentives after the program had been in effect for several years, but they are not the heart of the program.[29]

Under the program, communities applying for designation as enterprise zones must put together Enterprise Zone Coordinating Committees, with public and private sector involvement and local funding for proposed projects (revolving loan funds, incubators, economic development staffs, etc.). Usually the committees involve representatives from local government, the local redevelopment authority, the financial community, community-based organizations, and in some cases local labor and/or religious groups. Each year, new communities compete for designation. They are judged according to the quality of their local committees, proposals and matching funds. By 1986-'87, the state divided $6.25 million between 34 zones.

In addition, the state gives the zones priority in a series of other programs, from PIDA loans to Business Infrastructure Development grants to Department of Community Affairs grants. It also allows tax exempt bonds to finance commercial and retail projects, like shopping malls, only in enterprise zones – a policy copied from Massachusetts.

While Thornburgh's program is clearly superior to the standard model, it is not clear that it goes far enough to have a major impact. With 34 zones, the money has been diluted. The most important element of the program is probably that it gives the zones priority in so many state programs and helps local development groups force the state bureaucracy to respond to their needs. But experience suggests that development in many poor communities, particularly in the inner city, requires comprehensive local institutions with access to significant capital resources. Even the best CDCs, while making a positive impact on their communities, have rarely triggered the kind of chain reaction that leads to sustained, self-generating development.

This suggests that Pennsylvania's program might benefit from adding an entirely new dimension. Certainly additional grants for weak zones would be a waste of money. But for those zones in which strong organizations or coalitions are in place, the state might consider creating a special fund from which it could provide significant matching dollars, on the order of $5-10 million per zone, to capitalize comprehensive local development banks.

The state's most distressed areas are the towns and cities of western Pennsylvania where steel mills or manufacturing plants have closed down. What Lowell and New Bedford were to Massachusetts a few years ago, the Monongahela Valley and Beaver Valley are to Pennsylvania today. Until his last year in office, Thornburgh virtually ignored their problems. When Thornburgh focused his economic development efforts on advanced technology and the universities, people in the Mon and Beaver Valleys felt abandoned. When he pushed through a $25 million tax credit for new investments by mature industries – widely known as the "steel tax credit" – it was too late. State legislators from the Mid Mon Valley finally introduced a resolution of no-confidence in the Commerce Department. Though it never passed, it led to discussions between the legislators and the Commerce Department, and finally to a "Renaissance Communities" program.

The new effort, passed in Thornburgh's last year in office, involved three basic approaches: heightened targeting of state grant programs on distressed communities; partial state funding for several big projects in the Pittsburgh area, including a new terminal at the airport and a university research park built on the site of an old J & L steel plant; and what Thornburgh has described as "super enterprise zones" in the Mon Valley, the Beaver Valley, and the Shenango Valley (the Sharon area, about 80 miles north of Pittsburgh). The third effort, the heart of the program, involved $1 million grants to public-private economic development coalitions in four areas (the Mon Valley was divided into two regions). As in enterprise zones, the grants were designed to stimulate the formation of area-wide organizations, to help them hire staff, and to support their strategies for revival. In addition, the state promised to expedite all applications for specific project grants from these organizations.

Walt Plosila designed the program on the same basic model he had used for the Ben Franklin Partnership and the Regional Economic Development Program. "We're trying to do a grassroots-up effort," he explained. "Self-help is what it comes down to – getting the community together, through a council that's an umbrella agency, representing labor, business, and local economic development groups, to develop a long term strategy and then work with us on a day-to-day basis to help implement it."

Each of the four areas has taken a different approach. The first to develop its strategy was the Mid Mon Valley, where the Mid Mon Valley Progress Council pulled 16 area organizations together into a Revitalization Commission. Projects funded by the commission during its first year include a Battelle Institute study of what industries might be recruited to the area; an effort to market the region to those industries; an incubator; a successful effort to get three enterprise zones established in the area; a labor-management committee; a tourism campaign; and feasibility studies looking at the potential reuse of the two largest area plants that have closed in recent years. In one of these cases, a huge Wheeling-Pittsburgh integrated steel mill, the commission worked hard to find a new buyer who might operate a slimmed-downed operation. In this effort, however, it was hampered by the absence of any state program to help in the restructuring of mature industries. Its other major priority, a new expressway to finally connect the area to Pittsburgh by limited access highway, also awaits a major state investment.

The expressway symbolizes the real function of the Renaissance Communities program: to help the steel valleys organize themselves to seize what opportunities appear as the new Pittsburgh economy gains momentum. Lowell succeeded in Massachusetts in large measure because local leaders were organized and able to sell their city to the state, the federal government, and private corporations. Like Lowell, the Mon and Beaver Valleys will survive based on their capacity to exploit whatever growth the regional economy can produce. "It's sort of like getting organized on both sides of a bridge, and making sure the bridge is in place," says Ivan Tylawsky, who oversees the effort in the Commerce Department. "Then the traffic will come across."

To be truly effective, the Renaissance Communities program – like the enterprise zone effort – will probably have to be taken to a new dimension. One million dollars a year in "glue money" is a start, but to make a real dent, the targeted regions will need more powerful development institutions. In a sense, these areas need their own equivalent of the Ben Franklin centers: major, long-term, comprehensive institutions designed to address the problems of mature industries and distressed communities while building a new entrepreneurial base.

The Impact of Pennsylvania's Programs

As with any economic development program, it is difficult to measure the precise impact of Thornburgh's programs. Pennsylvania's economy is clearly changing in the directions sought by the Thornburgh administration. The economy is diversifying away form its former reliance on heavy manufacturing, which left it extremely vulnerable to foreign competition. Services have passed manufacturing as the leading category of employment, and employment in computer-related industries is growing rapidly.[30] The state's birth rate for new firms, which until 1985 was only about half the national average, has also begun to rise; in 1986 it grew twice as fast as the national average. Also in 1986, unemployment fell below the national average – for the first time since the early '70s – and stayed there.

How much Thornburgh's efforts have contributed to these developments is impossible to say. As a politician, Thornburgh likes to paint such statistics as the "full flowering" of his programs. Perhaps the best antidote to such claims is a 1984 essay he wrote describing his economic development strategy. In the introduction, he discussed an analogy drawn by Dr. Allan Meltzer of Carnegie-Mellon University:

> . . . Dr. Meltzer refers to state government's role in the economy as that of the skipper of a rowboat on a stream. The skipper cannot change the direction of the river's current; nor can he, except perhaps in a Don Quixote fashion, attempt to move up river against that current. What the skipper can do is assure that the rowboat is moving on as straight a course down the stream as possible, rather than towards one shoreline or the other. He also can row the boat slower or faster. In other words, state governments, on their own, cannot move against the currents of national and international economic forces, but they can attempt to steer the ship of the state on a narrow, steady and straight course, taking maximum advantage of these national and international economic forces as they affect the currents.[31]

That is perhaps the best description of what Thornburgh has done. The Ben Franklin Partnership, for instance, is an excellent program, but its role is to accelerate developments already underway in the marketplace – and even in that role, its impact will only become clear over a 10-20 year period. Pennsylvania is much better positioned for the 1990s than it was for the 1980s, and programs like the Ben Franklin Partnership have certainly pushed that adjustment along – both economically and psychologically. Even Pittsburgh, which has been hit so hard by the decline of the steel industry, is remarkably well-positioned – thanks largely to local public and private sector leadership over the last two decades, but with an intelligent assist from the Thornburgh administration.

The unsolved problems remain the many towns that once lived off steel, coal, or a single manufacturer, and – as in other states – the urban ghettoes. Thornburgh's enterprise zones and Renaissance Communities program are better designed than most of their counterparts around the nation, but they must be brought up to scale. And while the state does have some capacity to help mature industries retool and restructure through the Ben Franklin Partnership, PIDA, the MILRITE Council, and other programs, that capacity falls far short of the need. Still, Pennsylvania has developed what is, at this point, perhaps the best state development system in the country.

CHAPTER IV:
MICHIGAN

Of the three states discussed in this survey, Michigan has been hit hardest by the realities of the new global economy. Michigan is the nation's premier manufacturing state; it has the highest percentage of the workforce in manufacturing of any state in the union. Even if one subtracted the auto industry, durable goods manufacturing would still account for a higher percentage of employment in Michigan than it does nationwide.

The recession of the early '80s devastated precisely those industries that form the backbone of the Michigan economy. Between 1978 and 1982, the auto industry eliminated 110,000 jobs, and steel eliminated 40,000. The manufacturing work force as a whole shrank by almost 25 percent, losing 283,000 jobs. For four years running, Michigan had the highest unemployment rates of any state – peaking at over 17 percent. By 1985, there were still 59,000 fewer people working in the state than there had been in 1979.[1]

During the recession, Americans were routinely treated to televised images of Michigan families looking for work in Houston. Indeed, there *was* an exodus. Between 1980 and 1984 the population of Michigan shrank by 187,000. Per capita income plummeted from 103.9 percent of the national average in 1980 to 98.6 percent two years later. State tax revenues fell so sharply, in real dollars, that in 1983, despite deep budget cuts, the state deficit hit $1.7 billion – one-sixth of total state spending.[2]

As the recession began, an informal group of business and education leaders convened to discuss the state's economy. They believed that the state needed a new economic strategy, that it had to diversify its economy and stimulate technological innovation, particularly in manufacturing. They took their arguments to William Milliken, the moderate Republican who had served as governor since 1969.

In his State of the State address in January, 1981, Milliken embraced their ideas. He created a Governor's High Technology Task Force, made up of leaders from government, academia, the financial industry, and the more technology-oriented sectors of the Michigan economy. They proposed a number of new programs: a new state development fund, two new research institutes, and a public venture capital unit using five percent of the state's public pension funds. With bipartisan support, Milliken pushed these initiatives through the legislature.

When Milliken declined to run for a fourth term in 1982, the recession virtually guaranteed that a Democrat would succeed him. Labor swung behind James Blanchard, a relatively unknown congressman from the Detroit suburbs. Blanchard's claim to fame in economic matters had been his co-sponsorship of the Chrysler loan package, an experience that forced him to think about the problems of declining industries and international competition and made him a believer in government intervention to force business/labor cooperation. Blanchard won the election with a campaign that stressed what he called his three themes: "Jobs, Jobs, and Jobs."

To business leaders' surprise, Blanchard embraced Milliken's initiatives and launched an aggressive effort of his own. Michigan turned out to be the perfect laboratory for innovation: times were so bad that no one – not business, not labor, not the public at large – could defend the status quo.

Blanchard's First Year: The Short-Term Agenda

With unemployment at 17 percent and a mandate to create jobs, Blanchard needed quick results. He set up two groups, one to develop a series of proposals, the other to ensure that they had heavyweight political backing. The first was a Cabinet Council on Economic Development, similar to Dukakis's Development Cabinet and Thornburgh's Economic Development Committee of the Cabinet. The second was a Commission on Jobs and Economic Development, chaired by Lee Iaccoca and former United Auto Workers President Doug Fraser and bringing together the state's leading corporate executives, labor leaders, and the presidents of Michigan's three major universities. Later Blanchard would also create similar commissions on entrepreneurialism and small business, higher education, and job training.

With an agenda developed by the Cabinet Council and political support from his new commissions, Blanchard quickly announced a first wave of initiatives. He set up a fund to begin rebuilding the state's infrastructure. He cut small business taxes by roughly $18 million a year. He lowered unemployment taxes for new employees. He reformed the state's securities laws, making it easier for companies to issue stock in Michigan and triggering a burst of new public offerings. He rewrote a law that had given Michigan the reputation as the toughest state in the country in which to sell a franchise, and within three years the number of franchises tripled. He appointed a Small Business Ombudsman, to help small business people cut red tape and fight the bureaucracy. He created an Office of Women Business Owners and a Minority Business Advocate. He supported a bill to create five small business incubators and provided funds to get them started. He set up teams to weed out unnecessary bureaucracy, targeting 800 regulations and 17 percent of all state forms for elimination. He even established a Michigan Executive Corps, to draft business executives into temporary service with state government.

Blanchard's Cabinet Council had been staffed primarily by people brought in from various departments related to economic development. As the council's proposals were enacted, its staff went back to their bureaucracies to implement the new programs. This gave the governor a core of managers devoted to his agenda, just as the council itself gave him a way to bring his key department heads together around a common agenda. Hence the Cabinet Council not only originated the governor's economic development agenda, it provided a means by which he forced his bureaucracy to implement it.

The Path to Prosperity

After the initial flurry of activity, Blanchard and his Cabinet Council decided they needed to know more about the state's economy. They commissioned a careful study by a small group of economists and political scientists – similar to the Choices process in Pennsylvania, but far less public. "After the first year, we sat back and said, 'How the hell do all these things go together, and what the hell is it that we're really trying to accomplish?' " remembers Lou Glazer, then a deputy at the Cabinet Council. "After learning a lot, we learned we didn't know a lot. And that's where *The Path to Prosperity* came from. The idea was to provide a thematic whole for state economic development."[3]

The study group came to conclusions similar to those of Milliken's High Technology Task Force and Thornburgh's *Choices* report. It argued that Michigan's future rested upon technological innovation; that new and expanding businesses would be more important than plants recruited from out of state; and that the private sector was the engine of growth and innovation. The public sector's role, it said, was to encourage and channel private sector investment by reducing the cost of doing business, encouraging entrepreneurship, filling capital gaps, and investing public dollars in areas such as infrastructure, education, research, technology transfer, and the quality of life. Its report also called for a "coordinated human investment strategy" to train those left behind as plants closed and those left out of the growth process altogether, so they could qualify for the new jobs created by emerging industries.[4]

In one crucial aspect, however, *The Path to Prosperity* went beyond the *Choices* study. It carefully distinguished between Michigan's economic base – the sector of its economy that drives its growth by exporting products or services out of state, or by providing products or services that might otherwise come in from out of state – and its "local economy" of retail firms, restaurants, and the like. After carefully examining the state's economic base, which was heavily dominated by durable goods manufacturing, it argued that the key to future growth was the development of advanced, automated manufacturing. Thus it argued for a more targeted strategy than that chosen by Pennsylvania or other states.

As the authors of *The Path To Prosperity* saw it, a high-wage manufacturing state like Michigan had three options. It could "get poor," letting wages fall so as to attract new industries. It could "get out," shifting from manufacturing to services and information industries. Or it could "get smart," using new technologies to position itself back at "the manufacturing frontier." By that, *The Path to Prosperity* authors meant automation: robots, machine vision systems, laser instruments, CAD/CAM systems, computerized machining centers, flexible manufacturing systems, and the like. Two thirds of the nation's manufacturing assembly operations were located within 300 miles of Detroit, they pointed out. Michigan already hosted over one third of the nation's major robot users, and nine of the ten largest robot producers had operations in the state. The state also had a disproportionate share of the nation's machine-vision firms. With a boost from state government, *The Path to Prosperity* argued, Michigan could become the undisputed home of both the automated "factory of the future" and the hundreds of new companies producing technologies that went into it – just as Detroit had once become the home of automobile manufacturers and the Silicon Valley had become the home of the semiconductor industry.

To achieve this goal, the report maintained, the state's manufacturers would have to go through a technological transformation; its entrepreneurs would have to bring hundreds of new technologies to market; its research universities would have to excel in engineering and industrial technology; its industries would have to pioneer new labor-management relationships; and its government would have to minimize the disruption caused by the transition from brawn to brains. Blanchard has built his entire economic development strategy around the report and its analysis, developing new initiatives or building on Milliken's fledgling programs in all five areas.

"We couldn't suddenly say, let's go into aerospace, or let's go into microcomputers," explains Doug Ross, who directed the study and then became Blanchard's Secretary of Commerce. "You can't do that. You have to start with what you are, and then figure out how to adapt it and build it toward what you think is happening. The report gives us an economic sense of what the future looks like, which gives some hope, and begins to send signals as to what different institutions are supposed to do. Since ultimately you can compel almost no one to do anything, you need those kind of cues."[5]

In his first year, Blanchard had announced that he would target three industries for special state efforts: auto suppliers, forest services, and food processing. But *The Path To Prosperity*'s authors were skeptical of attempts to target particular industries, and Ross's Commerce Department has since backed off as well. Now the only significant targets are advanced manufacturing and new and small businesses.

Blanchard has created several new programs to achieve his goals, chief among them the Michigan Strategic Fund and the Michigan Modernization Service. Even his recruitment strategy has been designed to make Michigan home of the factory of the future. Before we turn to Blanchard's new initiatives, however, let us examine the germination of a seed planted by Milliken: the allocation of five percent of the state public pension fund for venture capital.

Using Pension Funds for Venture Capital

Dwight Carlson is president of Perceptron: The Machine Vision Company. His company is precisely what the Michigan economy needs: a high tech start-up with potential for rapid growth. It is a classic "flexible manufacturing" firm, with a "Theory Z" philosophy to match. "We're all professionals; it's all on a first name basis; everyone is a shareholder through incentive stock options; and it's a very high performance environment," says Carlson.[6]

Back in the late 1970s, the president of the Environmental Research Institute of Michigan (ERIM) approached Carlson with an idea. Formerly Willow Run Laboratories at the University of Michigan, ERIM was the state's premier advanced technology research institute. Most of its funding came from the Department of Defense, in the areas of remote sensing, radar, and surveillance. With some 50 high-tech firms spun off from research initiated at ERIM, it was already a successful example of the technology transfer process that Milliken and Blanchard hoped to promote.[7] Its president had an idea for yet another spin-off: to adapt the advanced "remote sensing" technologies that ERIM had developed for military spy satellites to manufacturing. Carlson liked the idea. Today Perceptron produces machine vision systems that help manufacturers check their products for quality as they move through the assembly line.

"The initial focus of Perceptron was to solve the fit problem, usually in sheet metal, now more in plastic," Carlson explains. "U.S. products have a quality problem, because they don't fit as well as a BMW or a Mercedes fit. That's true not only of automobiles, its true of computers and appliances." In most plants, checking parts for fit is laborious and time-consuming, done by hand with mechanical gauges, after the parts have been manufactured. If a problem is discovered, an entire day's run must often be discarded or reworked – something most managers will do only if the problem is acute.

In contrast, Perceptron builds systems that allow parts to be checked as they are built. Imagine a swarm of sensors surrounding a spot on the assembly line, something like a scaffold cluttered with small black boxes. In each black box is a laser, a video camera, and a microprocessor. The laser projects a beam on a spot; the cameras record the reflection; and the microprocessor converts that information into dimensional data, revealing fit, contour, the exact position of holes or studs, and so on.

The data is integrated by a computer and presented on a screen, where technicians keep track of it to see if the assembly line is functioning properly. The minute a problem appears, they shut down the assembly line and repair it. Some systems come with as many as 120 sensors and perform 200 measurements in 22 seconds.

By the end of 1985, Perceptron had sold some 100 systems, for prices ranging from $60,000 to $1 million. It was among the industry leaders in sales, and it was the first machine vision firm to have turned a profit. It has hit hard times in the past year, as General Motors' well-publicized problems with automation have triggered a sudden slowdown in sales. But, Carlson has unveiled a second product, a robot guidance system, and has captured perhaps 60 to 70 percent of the market for machine vision systems for assembly and stamping plants. Although that market is now stagnant and several machine vision firms have gone under, Perceptron appears well positioned to survive the industry slump.

The Perceptron story is an example of both the rebirth of entrepreneurialism in Michigan and the emergence of the factory of the future. But it is also an example of the role that state government is playing in that process: without venture capital from the state pension fund, Perceptron might never have made it into production. One of the pension fund's first venture investments was in Perceptron; in fact, it participated in both the second and third rounds of financing, along with half a dozen private firms.

But by '84, the capital markets were tight. "All of the high-tech West Coast darlings of venture capital – the personal computer, the software companies – were having real difficulties," remembers Carlson. "And as a result, the whole venture capital community was getting very nervous." Carlson searched for money for the better part of a year, while Perceptron's future hung in the balance. Finally the State Treasurer, who oversees the investment of the pension fund, made a decision: he believed in Perceptron, and he would do what was necessary to get the company over the hump. The pension fund put in another $2.5 million. Encouraged by that show of confidence, Carlson's others sources came up with the money he needed, and the company moved ahead.[8]

With five percent of the state's pension funds, or $850 million, to invest, Michigan now runs what may be the world's largest venture capital fund. It has had an enormous impact on the state. Ian Bund, one of the pioneers of venture capital in Michigan, puts it this way:

> In 1978, Michigan had about $6 million of resident venture capital. By the beginning of 1986, it had in excess of $300 million actually invested and at work. Back in 1980, when I formed the Venture Capital Forum, which is a monthly gathering of venture capital professionals to work together on deals, we were able to pull together four people. Tomorrow we'll have our regularly monthly meeting, and we'll have in excess of 40. Statistically, the industry has gone from virtually nothing to what [*Venture Capital Journal publisher*] Stan Pratt, who is the leading commentator on our industry, describes as the fastest growth rate in the country.[9]

Bund and other venture capitalists agree that the major catalyst for this explosion has been the state pension fund. "Would it have happened anyway?" asks David Brophy, a professor of finance at the University of Michigan's business school and the state's leading academic authority on venture capital. "I don't think so. In previous years, a lot of the venture capitalists in the country would fly over Michigan, would never think of looking here for deals. Public Act 55 (which created the state fund) was like bringing a sledgehammer down on a gong. It made a big noise, and a lot of people paid attention to it."[10]

Among those who paid attention were prominent venture capitalists on both coasts. When they came to Michigan to solicit investments by the pension fund, Treasury officials showed them promising deals in the state. The result was an increased flow of private venture capital into Michigan. Two of the big funds even decided to open midwest offices in Michigan.

"Venture capitalists are like everybody else in the world," explains Brophy.

> They smell the cheese, and they're comin'. When I came to Michigan, I was told by everybody that if there were good deals here, money would find them – 'Money's liquid, money flows, and Michigan's got lots of money.' And I said, I couldn't agree with you more, Michigan has tons of money. It's not money that's really lacking, it's the professional financial manager, the person who can size up an opportunity, structure a deal and make it go. If we had those people around here in abundance, I don't think you'd need a Public Act 55. We saw to it that we'd never have those people by our reaction to the problems of the early thirties, because we just ripped the guts out of the financial community here in Michigan. We greatly restricted the banking system, put out of business the only large insurance company we had. So we were left with a financial system that would have done credit to the state of Mississippi, trying to run the sixth largest state in the country. That's what we were missing.
>
> How did Act 55 bring those people here? By hitting the gong with that hammer, saying there's money here devoted to this purpose. It's being professionally managed and professionally doled out, and if you can step up here and pass muster, you can have some of it. That has put some money in the hands of some pretty skilled professional people. And it has caused the state of Michigan to become a somewhat attractive place to be.

By September 1987 the state had invested $290 million – roughly two-thirds of it in private venture capital funds, the other third in 30-odd start-up businesses, most of them in Michigan. (Though its primary responsibility is to get the highest return for Michigan's pensioners, State Treasurer Robert Bowman believes there are enough good deals in Michigan today to justify concentrating on in-state firms.) Bowman hopes to earn a 35 percent annual return on his investments: "Three out of ten will go bankrupt, three out of ten will be all right, three out of ten will be good, and one, if it goes well, will be an absolute barn burner. We've already turned down several opportunities to sell out (our stock in a company) to another investor, one at a 700 percent profit."[11]

Michigan is not alone in putting pension money into private venture firms; perhaps a dozen other states do likewise. But Michigan was the first state to invest directly in business start-ups, and it has moved more aggressively than the one or two other states that do likewise. This is the key to its strategy of getting private venture funds interested in

Michigan. By co-investing aggressively, by sharing deals with the largest private funds in the country, it is able to showcase Michigan's start-ups from coast to coast. And by all accounts, the private funds listen.

The state's co-investment strategy also minimizes the potential of political considerations affecting its decisions. "You wouldn't get anybody to co-invest with you if that was the case," says Robert Williams of Regional Financial Enterprises, a large Connecticut-based firm. "We wouldn't stay around for two minutes if we saw any of that."[12] Perceptron is a good example. Dwight Carlson sat on the task force that first recommended that Michigan invest pension money in venture capital. If the state were investing alone, its investment in Perceptron might lead to accusations of cronyism. But it can easily defend its decision by pointing to major private sector investors who have also judged Perceptron to be a good risk.

Skeptics might argue that private venture capitalists would have eventually discovered Michigan on their own. They may be right, but Treasury Secretary Bowman argues that by speeding up the process, state government played a critical role.

> I would argue that it's similar to justice: justice delayed is justice denied, and financing delayed, in an internationally competitive market, is a loss for the state of Michigan. You take a state like California – it's a national economy. Somehow it all fits together. But in states that are predominantly manufacturing, as we were and still are, you occasionally have to push a little here, nudge a little there, to try to shave two years off. Maybe that's all we shaved off this whole race for the automated factory, but that 24 months could prove to be the difference between winning the race and coming in third – which is all the difference in the world.

Brophy adds his own bottom line:

> The net result of all this is that we're learning how to finance new and growing businesses – high tech, low tech, no tech, it doesn't matter. That's a residue that's going to stay with us. Even the banks now – I'm getting all kinds of calls from my banker friends: 'How do you do venture capital? I want to talk to you about this stuff.' And that's healthy. If you've got an environment where new companies can form and new ideas can be pursued, your chances of surviving economic change are a hell of a lot better than if you're locked into a kind of company-town philosophy and nobody's doing anything out on the edge. You'd better be able to finance new companies and help them grow if you want representation in the industry of tomorrow, whatever that may be. That's going to be the ultimate public benefit for Michigan.

The Michigan Strategic Fund

Venture capital will meet the needs of only a tiny sliver of Michigan's economy, the few start-up firms with technologies that are advanced enough to show promise of dramatic profits. Yet as Brophy points out, Michigan's banks are relatively conservative in their lending practices. Since the auto industry reached maturity, Michigan has been among the least entrepreneurial states in the union – in part because of the culture engendered by the big three auto producers, in part because of the financial markets. Thus, once the venture capital gap was closed, there remained a significant gap between venture capital and the banks.

To fill that gap, Blanchard created the Michigan Strategic Fund, perhaps the most sophisticated development finance agency in the country. Although he put several public loan programs in the Strategic Fund, the heart of the effort is a set of new wholesaling programs, designed to change private sector investment patterns.[13] "We want to use what money we have to help make possible bankable private deals that aren't getting made," explains Peter Plastrik, president of the Strategic Fund.

> We want to influence the behavior of private financial institutions, without increasing their risk. We believe there are gaps in the private marketplace – for instance, entrepreneurial capital below the venture capital level. Venture capitalists want a 35 percent annual return on their money within four or five years, usually when the company goes public. Not every

> company can do that, but those that can't are often still too risky to get bank loans. Other firms have real growth potential, but lack the zippy technology venture capitalists are fond of. Small businesses also have trouble getting capital, because it's too much trouble for the banks. So we want to help the private sector create new lending vehicles for small business.[14]

Perhaps the simplest and most elegant of the Strategic Fund programs, the Capital Access Program does nothing more than offer banks an incentive to set up insurance funds to cover losses in their riskier portfolios. If a bank will establish such a "Loan Loss Reserve," the state will contribute to it. In theory, the existence of an insurance fund will allow banks to make more loans to new businesses, small businesses, and other firms that would not qualify for a conventional bank loan. By September 1987, 48 banks had agreed to participate.

The program works like this: the Strategic Fund sets up a reserve fund for each participating bank, to cover losses in a special, higher-risk portfolio. Each time the bank makes a loan under the program, the bank makes a contribution to the reserve, the borrower matches that contribution, and the state matches the total of those two contributions. The bank determines which loans carry high risks and negotiates the amount of the contribution with the borrower. (Their combined payments normally range from three to seven percent of the total loan amount.) It is in the bank's interest not to put normal loans in the high-risk portfolio, because it costs the bank money to do so. The bank can only withdraw money from the reserve fund to cover losses on its special portfolio.

The reserve fund, which ranges from six to 14 percent of the value of the portfolio, allows the bank to absorb loss ratios far higher than those on their other business loans (which are normally under one percent). This allows the bank to be far more aggressive in providing business loans than it formerly could be. If the loan loss reserve fund runs out, however, the bank absorbs the rest of the loss. Unlike 80 or 90 percent loan guarantees from the SBA, this forces the bank to evaluate the loan with some degree of prudence. The program also frees the government from the task of evaluating loans, something the SBA must do with most banks. Since the bank makes the underwriting judgement on its own, no government bureaucracy is necessary. The government is simply providing a small insurance fund to share the risk, so the bank can stretch its lending net to encompass more firms.

A second Strategic Fund program copies a Pennsylvania effort: state money to catalyze the formation of seed capital funds. While Pennsylvania demanded $3 in private money for every $1 in public contributions, however, Michigan required that private investors put up only $1 to match each $2 in state money. The Strategic Fund chose four private seed funds, all of which will operate statewide, and loaned each one $2 million. The loans do not have to be repaid until the fund is dissolved, and the interest rate is 9 percent.

The Strategic Fund has created a similar program to capitalize institutions that fit between seed funds and banks. These are Business and Industrial Development Corporations (BIDCOs), which were pioneered in California under Jerry Brown. BIDCOs are private financial institutions which make business loans but do not accept deposits. Because they are capitalized by private investors rather than depositors, they can afford to take greater risks than banks. But because they are regulated by state government, like banks, BIDCOs can participate in federal loan guarantee programs, such as those operated by the SBA and the Farmers Home Administration.

The idea is to create an entirely new financial industry designed to fill the gap between venture capital and bank loans, with perhaps 20 or 25 BIDCOs operating around the state. Plastrik and his staff envision the BIDCOs as smaller versions of the Massachusetts Capital Resource Corporation. Their primary role will be to make subordinated loans in tandem with banks, often with the option to purchase stock if the firm is successful. They could also make SBA-insured loans, and if they desired, they could create SBA-licensed Small Business Investment Companies or MESBICs, as subsidiaries, to make equity investments.

In California, where the state provided no start-up capital and the BIDCOs were thinly capitalized, they have been relatively cautious, primarily making SBA-insured loans. To ensure that Michigan's BIDCOs have enough capital to be more aggressive, the Strategic Fund will invest up to $2 million of equity in each one. The BIDCOs' private investors will be required to come up with at least twice that much. As each BIDCO becomes successful, the Strategic Fund will sell its stock and back out. In addition, the state pension fund will provide both debt and equity to BIDCOs that meet its criteria, purely for the market return. Plastrik hopes to use the pension fund's example to convince private insurance companies to follow suit.

The Strategic Fund has two other new programs, both of which are more traditional retailing operations. One is a Product Development Fund, similar to Massachusetts' and Connecticut's funds. It will provide venture capital for new products and processes developed by established firms, taking its return in the form of royalties. The other is a Minority Business Loan Fund, which is somewhat akin to Massachusetts' Community Development Finance Corporation. It has made roughly $1.5 million in investments, usually in the form of subordinated loans, some with an option to buy stock if the firm is successful. Every company in the portfolio is assigned a free consultant of the Strategic Fund's choosing. In addition, the Strategic Fund is soliciting investors for a minority-owned BIDCO. Unlike the other BIDCOs, this one will require only $500,000 in private money to get $1.75 million in public funds, which will be converted to a grant if the BIDCO meets certain performance targets.

The Research Strategy

Between its Strategic Fund and its public pension fund, Michigan has taken a significant step toward closing its capital gaps. But the transformation of the Michigan economy will take more than new forms of capital. It will also take new ideas, new companies bent on commercializing those ideas, and new approaches by existing companies. To create seed beds for those ideas and companies, Gov. Milliken's Task Force on High Technology recommended that the state finance new research institutes in industrial technology and in biotechnology.

In similar situations, many states have poured money into existing academic departments, or created applied research centers at universities, jointly funded by industry and government. But Milliken's task force decided that if Michigan's new programs were to be of real value to industry, they would have to be independent of academia. The design was a hybrid of two models: on the one hand, the new entities would be research institutes, located at or near major universities; on the other, they would be independent institutions, driven by industry's needs rather than those of academic researchers (who advance in their professions by excelling in basic research). This dual role has led to more difficulty than the task force anticipated.[15]

The institutes' funding has come primarily from state government and from Michigan foundations. The Industrial Technology Institute (ITI) received over $50 million from foundations, plus $17.5 million from the state for the first five years. The Michigan Biotechnology Institute (MBI) received $6 million from the state and roughly $23 million from foundations.

Located in Ann Arbor, ITI is a critical link in the state's strategy to target automated manufacturing. Automation Alley, as the stretch between Ann Arbor and Detroit is becoming known, already boasts the largest concentration of machine vision and robotics firms in the nation. ITI is designed to help the area research critical mass – to make it, in former director Jerome Smith's words, a "Silicon Valley in Southeast Michigan for durable goods equipment suppliers."[16] It is also designed to help Michigan's manufacturers adopt these new technologies and thus remain competitive. These two goals – the development of new technologies and the deployment of new technologies – have proven difficult to reconcile.

Very few research institutes or centers of excellence around the country focus on the *process* of manufacturing, rather than on specific *product* technologies, such as robotics or software. As such, ITI is an important experiment. Its creators believed that the state needed some kind of bridge between basic research on the application of microelectronics to manufacturing – which took place mainly in universities – and the applied research done by industry. Their convictions were based more on intuition than on market research or on a careful look at models in other countries. But ITI's experience has proven their intuitions correct.

If ITI's founders were clear about the niche they wanted to fill, they were not so clear about how ITI could fill it. They decided to construct a new building, complete with a fully automated model manufacturing facility; to hire a staff of 250 by 1992; and to set a goal of over $20 million a year in contract research by 1992, a level that would make the institute self-supporting. Their "technology development" role was fairly easy to visualize: ITI would do advanced research on new manufacturing technologies, on contract with individual firms, consortia of industrial firms, or government laboratories. The "technology deployment" role was a bit more difficult. ITI's founders believed that the staff could consult with firms to analyze their production problems and to help them adopt automated equipment; that it could help managers analyze the costs, benefits and effects of adopting automated systems; that it could analyze new product designs for industry to assess their manufacturability; and that it could teach managers how to adopt new approaches – particularly to labor relations – required by the new technologies.

ITI's first president, Dr. Jerome Smith, proceeded to hire a first-class research staff, whose instincts have pushed the institution toward academic research. ITI has done some important research work, and in some cases it has also played the "technology deployment" role. A good example is provided by General Motors' manufacturing automation protocol (MAP), which is designed to facilitate communications between all computerized machines used in the factory – robots, machining centers, machine vision systems, and the like. MAP is essentially a shared operating system and language, akin to the IBM operating system that allows every manufacturer to produce personal computers which can operate programs designed for IBM PCs. Wearing its technology development hat, ITI has done contract research on MAP. Wearing its technology deployment hat, it has been recognized by GM and the National Bureau of Standards as an authorized testing center, where companies can test their equipment to see if it is fully compatible with the MAP system.

This is an important role, which ITI hopes to duplicate in other areas. Businesses do not establish these kind of services on their own for fear of violating antitrust laws or giving away their technologies to competitors. Smith believes institutes like ITI are the perfect vehicles: they can pinpoint the collective needs of industry, then establish the standards and services to fill them. There is no previous model for this kind of thing in computer technology, according to Smith. "The industrial anthropologists could have a field day on this," he says. "But I think this is one of the keys to American industrial revival."

For the most part, however, ITI has not succeeded in fulfilling its founders' vision of a technology deployment role. Most of its efforts have gone into contract research. Even here, the institute has had trouble proving its value to industry. In 1986, with only $3.2 million of contract research (and only about half of that from industry), it fell far short of its goals. Virtually none of its research was for small or medium-size firms, because they could not afford its rates. Disappointed with these results, the board began searching for a new president who would be better able to sell ITI's services to Michigan manufacturers. It also began to push the idea of forming research consortia involving a number of firms – something ITI had done to a limited extent – rather than simply pursuing research contracts. Many laboratories can fulfill research contracts, but few institutions can foster joint research within an industry – a role ITI is perfectly positioned to a play.

The Michigan Strategic Fund, which controls the state money earmarked for ITI and MBI, began a simultaneous effort to force ITI to concentrate more on technology deployment, particularly in smaller firms. When ITI applied for a second five-year grant from the Strategic Fund, Plastrik and his staff agreed to provide $4 million, but only for specific technology deployment projects, with specific performance benchmarks and review processes built in. One project will develop a software program that can help diagnose a firm's needs for new production technologies, much as a medical diagnostic program can help a physician decipher a complex set of symptoms. A second will examine why durable goods manufacturers have had such trouble implementing machine vision and other sensing technologies, such as those developed by Perceptron. A third will create a training program for factory managers in computer-integrated manufacturing, using ITI's model manufacturing facility. To encourage ITI to work with small firms, the Strategic Fund gave it another $3 million to do work on contract with Michigan's industrial extension service, to which we will turn in a moment.

The Michigan Biotechnology Institute has experienced similar problems. It was created on the assumption that it could provide research that would benefit the state's forestry, wood products, agriculture and food processing industries. Dr. Gregory Zelkus, its first director, has put the institute well on the road to its desired status as a world-class biotechnology research institution. But defining an economic development role – a market for its products – has proven extremely difficult. Again the Strategic Fund has intervened. At the Strategic Fund's insistence, MBI plans to create a for-profit subsidiary to commercialize its research breakthroughs – by licensing them to existing firms, by joint venturing with existing firms, or by creating new firms to take them to market.

It will not be clear whether the revamped research institutes can successfully fulfill their missions for some time. One clear lesson has already emerged from their experiences, however: technology development and technology deployment are very different functions, which may belong in different institutions. Once a top-flight research staff is in place, an institution almost inevitably becomes driven by a research – rather than a development – agenda. In Japan, which vigorously pursues the kind of work done by ITI and MBI, responsibility for technology development and deployment are generally kept separate. Michigan would probably be better off if Milliken's task force had looked at Japanese models and done likewise. As it is, MBI has decided that it needs a separate corporation to take its technology into the marketplace, and the Strategic Fund has earmarked roughly half of its second grant to ITI for work on contract with a separate state institution whose primary mission is technology development.

When the legislature funded MBI and ITI, representatives from Detroit pushed hard for a third institution, in their city. As a result, the legislature also appropriated $1.5 million for a Metropolitan Center for High Technology, an advanced technology research and incubator center near Wayne State University. While the other centers had clear technology focuses, MCHT simply had a huge, unrenovated building and a vague idea that jobs could be generated in the inner city. Predictably, it has not fared as well as the other two institutions. It has failed to attract the "anchor tenant" it wanted – a large research firm or project – to give it credibility. At this writing, it has a dozen or so tenants, but it is still awaiting the anchor tenant and for enough start-up tenants to ensure success.

The Michigan Modernization Service

In the shadows of Michigan's large durable goods manufacturers lie some 15,000 manufacturing firms with 500 or fewer employees. (Nearly 10,000 of them have 20 or fewer employees.) These smaller companies employ more than half a million people, with an annual payroll of $11 billion. Nearly half of those jobs are in industries closely linked to automobile production, such as plastics, primary and fabricated metals, and machinery.[17] These "foundation firms," as Blanchard administration officials call them, form a supply chain that makes it possible for industrial giants such as GM, Ford and Chrysler to function.

Many of these foundation firms are small machine tool operations, which contract to provide components for larger manufacturers. Studies of the machine tool industry during the difficult years of the early '80s reveal both great turbulence and significant vitality among these foundation firms. Between 1978 and 1984, the industry lost 2,900 jobs. Yet 53 percent of the firms that survived grew in size, adding nearly 10,000 new jobs. In addition, 400 new machine tool companies were born, creating another 5,000 jobs.[18]

Another study looked at the characteristics of growing machine tool firms. It found that the fastest growing companies were those that had begun using computer numerically controlled (CNC) machines, the most advanced of all machine tools. By and large, these successful firms were younger and smaller than the industry average. Thus a wave of innovation was sweeping through the industry, pushed forward by new firms that embraced the latest technologies.[19]

With the auto makers pushing to cut costs and moving toward computer-integrated manufacturing and just-in-time delivery systems, suppliers who are also using computerized production processes have a great advantage. Yet it is far more difficult for the small firm to automate than for the large firm. The process is expensive, it is time consuming, it requires careful planning, and it requires that the work force be retrained to use the new machines. Few of those running small firms have the time or capital necessary to accomplish this transformation; hence the tendency for new technologies to be exploited more often by start-ups than by existing small firms. (See Chapter VI for more on this point.)

Based on the Path to Prosperity group's analysis of the Michigan economy, the Blanchard administration decided the public sector could play a critical role in helping foundation firms adjust to the world of automated manufacturing. It began by creating a new Technology Deployment Service – a small group of consultants, most of them from the private sector, who work closely with foundation firms that are considering installing computer-based production technologies. These agents carefully assess the client firm, draw up a 50-60 page report recommending a plan of action, and refer the firm to private-sector consultants if necessary. TDS also contracts with "training associates" at community colleges, who draw up detailed training plans for the firms and help them apply to a small training fund set up by the administration for this purpose. In the program's first year, TDS representatives delivered 45 reports and training plans and secured training for 2,400 employees. TDS also developed a pool of 75 private-sector "manufacturing technology consultants" to which it refers clients with more complex problems.[20]

Blanchard also created a Technology Transfer network. TNN is a network of agents at Michigan colleges and universities who are available to diagnose problems for foundation firms and to refer them to others with the technical expertise to help – whether at a university, through state government, or in the private sector. It is essentially an information and referral service, whereas TDS is a consulting service that actively works with businesses for up to six months at a time.

In the same division of the Commerce Department as TDS, Blanchard created an Office for New Enterprise Services (ONES) to work with entrepreneurs who are trying to start their own technology-oriented companies. ONES helps them write business plans, formulate marketing strategies, and find potential sources of financing, both public and private. For firms with strong business plans, it acts as an advocate with state funding sources. In its first year, roughly half of its clients were related to manufacturing.

In 1987, the Blanchard administration is expanding TDS and ONES. It is adding a marketing function (to help with export promotion, for instance); a staff to help TDS clients find financing; and a research center. The new entity, called the Michigan Modernization Service (MMS), will also include a "Leadership Education Program" to provide workshops and educational programs for managers, union leaders and entrepreneurs on subjects such as new technologies, cost-benefit analysis, the management of rapid growth, and so on. Half of MMS's core staff has moved to the ITI building in Ann Arbor, and MMS will contract with ITI to perform some of its functions – thus bringing their services to the world of foundation firms. In 1988 MMS will add a program to help Michigan firms and unions adopt more cooperative labor-management systems, which will work in cooperation with the Department of Labor's grant program for area labor-management committees.

Recruitment Strategies

Blanchard has not only developed new economic programs built around the themes of technological innovation, the factory of the future, and wholesaling, he has built an industrial recruitment effort consistent with these themes. Blanchard asked a team at the University of Michigan's Institute for Labor and Industrial Relations to develop an input-output model of the state's economy, through which the state could estimate the effects of any new plant on total earnings, jobs, and state and local tax revenues – and thus the appropriate level of financial incentives.

In 1984, Blanchard used this model to fashion a package of property tax reductions, job training subsidies, and infrastructure developments worth more than $120 million to convince Mazda to build a new plant in Flat Rock. The model indicated that Mazda's long-run contribution to the state's economy would outweigh the financial subsidies. In addition, Blanchard saw the Mazda plant as a psychological turning point for the state. "Mazda was important because it got coverage," he explains.

> People here were used to believing the propaganda, that Michigan was somehow a bad place, that we were dying, that nothing would work. There was a sense of helplessness. But Mazda was a major transformation, because we were able to get the most modern auto plant in the world, in competition with South Carolina, a right-to-work state. That shook everybody up. Then we were able to come in with all these dozens and dozens of weekly examples of things that were happening that were good for Michigan in terms of economic development, not just in manufacturing, and they're now being covered by the press. If you look back, that was the event which turned things.[21]

In contrast to the Mazda deal, Blanchard later withdrew from the bidding for a Mitsubishi plant when his input-output model showed that the long-term benefits would not outweigh the subsidies Mitsubishi wanted. The real breakthrough for Michigan came when GM put its Saturn plant up for bid in 1985, however. In their efforts to land Saturn – the most sought-after plant of the decade – Blanchard and his staff put together perhaps the most unusual state offer ever made to lure an industrial plant.[22]

GM launched Saturn to build an entirely new car in an entirely new way – to rethink the entire process of automobile manufacturing. Saturn's executives brought the same "clean sheet" approach to their labor bargaining with the UAW: there would be no layoffs at the plant, hierarchical distinctions would be minimized, time clocks would be done away with, and participatory decision making would be the rule.

If Saturn and the UAW were creating a new kind of partnership on the assembly line, Blanchard's aides reasoned, why not offer a new partnership outside the plant as well? "We were trying to say to Saturn: 'You've rethought so much of your way of doing business that it only makes sense that you do the same with state government, that you begin a whole new relationship with state government, a long term partnership that has the flexibility to change your way of doing business,' " explains Pete Plastrik. The partnership would be embodied in a new public authority called a "Manufacturing Innovation Partnership" (MIP), through which Saturn, the UAW, the local community and the state would invest in new training programs, new R&D strategies, new relationships with Saturn's suppliers, and new efforts to develop the local community.

For a plant that would have five percent of its work force in retraining at any one time, the state offered to invest $100 million in training over ten years, most of it to build and operate a new "Saturn Institute" on the plant grounds. Jointly designed and run by Saturn, the UAW, Saturn's suppliers, and the state, the institute would provide not only training and education, but child care, recreation, counseling, retiree programs, even health and fitness programs.

Nearby the MIP would construct a "Saturn Industrial Park" for suppliers, built to Saturn's specifications to facilitate "just-in-time" deliveries to the plant. In addition, the state would put $50 million into a fund to support research and development in industrial technology – particularly joint ventures between Saturn, its suppliers, and state research institutions such as ITI. The money would also provide development capital and technical consultations for small manufacturers who needed to upgrade their technology to sell to Saturn.

For the local community, the MIP would have a $5 million development fund, for projects such as small business incubators, housing, neighborhood development, or recreation facilities. Finally, the state would put up $100 million over ten years for a "Clean Sheet Development Fund," to be used for any unanticipated investments the partners felt were necessary.

On the regulatory side, the proposal was equally surprising. Since the company pledged no layoffs, the state offered to rebate all of its unemployment taxes. Since Michigan's workman's compensation taxes were high, the state would allow Saturn and the UAW to opt out and negotiate their own system. On environmental matters, Michigan would minimize interference by operating far more than usual on trust. It would reduce monitoring, give the company "maximum discretion" in applying the best available technology to control pollution, and jointly finance advanced pollution control research. Finally, to ensure a minimum of red tape all around, Blanchard promised to appoint a "Saturn Regulatory Ombudsman."

Overall, counting $200 million in property tax abatements offered, the package would have cost the state at least $500 million over ten years. Aside from the property tax abatement, "all of our investments were intended to be ways of building the asset base in Michigan, rather than just subsidizing GM," says Plastrik. "With the training, we would be building a manufacturing elite in Michigan. With the R&D money, we would be creating engineering expertise here, which is the key to being a leader in advanced manufacturing."

As it turned out, however, Michigan lost the plant to Tennessee, primarily because Tennessee had a location more central to the anticipated Saturn market. But Michigan's proposal did succeed in catapulting a high-wage, high-cost state into the final three. Roger Smith, chief executive officer of GM, called it the most innovative proposal he received. And Michigan won a consolation prize, the Saturn headquarters and R&D center. While this facility will not create as many jobs as the actual plant, it will have other advantages for the state. It will be far more likely to become the source of innovative spin-off companies than an assembly plant would, for instance.[23]

The Impact of Michigan's Programs

In contrast to Governors Dukakis and Thornburgh, Jim Blanchard has been in office only since 1983. As a result, it is difficult to assess the impact of his economic development efforts. Gov. Milliken's decision to use public pension funds for venture capital investments clearly sparked a venture capital boom in Michigan, but it is too early to tell how successfully the state's entrepreneurs will be able to capitalize on the new financing. It is even harder to judge the impact of Milliken's Industrial Technology Institute and Michigan Biotechnology Institute; both are still in their formative years. Blanchard's key initiatives – the Michigan Strategic Fund and Michigan Modernization Service – were not put into place until 1986 and '87. Although both appear quite sophisticated on theoretical grounds, many of the specific programs involved are barely off the ground.

Blanchard does appear to have had at least a psychological impact on the overall business climate in Michigan. With his tax cut for small business, his worker compensation reforms, his reform of the state's securities and franchise laws, his efforts to reduce bureaucratic regulations and paperwork, and his appointment of a Small Business Ombudsman, he has successfully changed the image that many Michigan business people have of government. His efforts have earned praise from trade associations representing businesses large and small, and Michigan's business formation rate has increased. Blanchard has also financed an extensive promotion campaign that paints Michigan as a state on the manufacturing frontier, a state in which rapid innovation is creating new technologies and state-of-the-art manufacturing capability. Whether or not this campaign has attracted new investment to Michigan, it appears to have had some impact on those in the state. Blanchard has given both the state's leaders and its people a more positive vision of the future, a reason to believe in Michigan. In economic development, that is half the battle.

CHAPTER V:
OTHER STATES

Massachusetts, Pennsylvania and Michigan are leaders on the economic development front, but they are not alone. At least half a dozen other states have developed active, relatively comprehensive economic development agendas. And most states are now pursuing at least two or three of the new initiatives pioneered over the past decade. The most popular are technology programs, small business programs, and capital funds.[1]

It should also be noted that education reform, which has been widespread, has almost always been presented by governors as a necessary element of economic development. Indeed, education reform and economic development have been the two top priorities for most governors in the 1980s. Infrastructure repair, another dominant theme in the 1980s, has also been seen as a necessary underpinning of any economic development efforts.

The following pages will provide a thumbnail sketch of economic development efforts in a few of the more active states in recent years, including Indiana, Ohio, New York, Arkansas, Minnesota, and Montana. Although this sampling is by no means exhaustive, it should serve to provide a sense of the breadth of innovation in state economic development, as well as a brief introduction to a few programs that differ from those in Massachusetts, Pennsylvania, or Michigan.

Indiana

In 1983, the Republican administration of Gov. Robert Orr collaborated with the Indiana State Chamber of Commerce – which was run by Orr's 1980 Democratic opponent – on a lengthy study of the Indiana economy. The resulting report, called *In Step With the Future*, recommended a far-reaching strategic plan for the state. Lt. Gov. John Mutz, who runs the Commerce Department and has been the key government sponsor of Indiana's new strategy, successfully pushed many of the report's recommendations (and some of his own proposals) through the legislature.[2]

Among the most innovative results was the establishment of a new public-private partnership, the 68-member Indiana Economic Development Council. The council is responsible for strategic planning, the recommendation of new economic development programs, and the evaluation of existing programs. It is funded jointly by the state and the Chamber of Commerce. Its members, appointed by the governor, are drawn from business, labor, government and academia – ensuring broad private sector input into policy formation. The governor is chairman of the board; the lieutenant governor is chief executive officer.

Indiana has created three public-private corporations to concentrate on the development of new businesses. The Corporation for Innovation Development is a private venture capital company designed to invest in Indiana businesses; the state capitalized it by granting a 30 percent tax credit to its investors. The Corporation for Science and Technology is a private, non-profit corporation funded by the state to invest in Indiana firms that are creating new products and to provide advice about new technologies and product development. By mid-1986 it had invested roughly $20 million in some 30 projects. The Institute for New Business Ventures, a third private, non-profit corporation funded by the state, provides training, technical assistance, and workshops for entrepreneurs seeking to create new businesses. These three institutions work closely together; all are located in the same building, along with the Indiana Economic Development Council, the Chamber of Commerce, and the Department of Commerce.

Indiana has put roughly $25 million a year into new training programs. One focuses on dislocated workers; another concentrates on retraining workers in basic industries such as autos, steel and durable goods; and a third provides customized training for new and expanding industries. The state has also liberalized its laws governing public pension funds, so that they can invest in state housing bonds and in the Corporation for Innovation Development. Finally, it has passed legislation restructuring its banking system, which formerly did not allow branching beyond county lines.[3]

Ohio

Ohio is yet another state that conducted a major strategic planning process and published an economic blueprint. Some of the resulting programs borrow from experience in neighboring Pennsylvania, particularly the Ben Franklin Partnership model. Democratic Gov. Richard Celeste, elected in 1982, quickly created the Ohio Thomas Edison Program, which provides matching grants for joint business-academic research institutes and some seed capital for advanced research projects. Like the Ben Franklin Partnership, the program is run through regional "Advanced Technology Application Centers" – although Ohio has more centers than Pennsylvania and limits each center to one technology focus. In its first three years the Edison program received $80 million in state funds.[4]

Ohio has also created an industrial extension service. Called the Ohio Technology Transfer Organization (OTTO), it has 34 technology transfer agents based at the state's two-year community colleges. Another Ohio program, the Office of Labor-Management Cooperation, provides grants to local communities that create Area Labor-Management Committees, as well as to regional centers designed to promote the concept of labor-management cooperation through research, information, training and technical assistance.

One other Ohio program deserves mention. In 1983, the state treasurer launched a Linked Deposits Program, in which the state deposits its funds in banks that agree to use the money for small business loans. The state accepts an interest rate of up to three percent below the market rate for certificates of deposit, and the bank agrees to lend the money to small businesses at up to three percent below the going rate.

New York

New York probably spends more money on economic development than any other state, although it does so with less coherence than many. Roughly 20 different state agencies have some role in economic development; they spew out financing for a wide variety of programs, with a bias toward large projects such as convention centers and sports stadiums. But within this unwieldy framework are a number of newer programs worthy of note.

One is the New York Science and Technology Authority, which houses a complete menu of technology programs, including a seed capital fund; nine "Centers for Advanced Technology," which provide grants for industry-university research in one area of technology; a handful of Regional Technology Development Organizations, which act as local economic development agencies for technology firms; an Industrial Innovation Extension Service; grants for businesses doing feasibility studies of new production technologies; a Roster of Retired Scientists, Engineers and other Experts, to assist new and emerging technology companies; and a program to help businesses secure federal Small Business Innovation Research grants.

Perhaps the most innovative New York program was launched not by state government but by the Port Authority of New York and New Jersey, an independent agency. Called XPORT, it is the nation's first publicly-sponsored export trading company. Its staff of 20 works with small and medium-size companies, on three year contracts, to help them break into new export markets. For a small fee, XPORT handles all aspects of the export process: finding overseas distributors and buyers, providing export licenses, securing export insurance, and so on. In addition, XPORT's New York clients have access to below-market-rate export loans from the state's Job Development Authority. Clients pay XPORT a percentage of their export sales (normally about ten percent); thus if the program is unable to sell their products, the effort costs them nothing. By 1986, XPORT had worked with 70 companies.

New York recently created perhaps the most sophisticated state program to support employee ownership in the country. Called the Center for Employee Ownership and Participation, its staff works with companies and unions to perform prefeasibility studies of potential employee buy-outs, to provide technical assistance of all kinds, and to help secure financing for buy-outs from the state's Job Development Authority. It is also working to catalyze the formation of Local Ownership Development Corporations, which would do similar work in their own regions.

Finally, recent legislation created an Industrial Effectiveness Program that will focus on revitalizing manufacturing industries in New York. One related program that is already underway funds demonstration projects in which the state will work with management and labor in specific industries. Demonstration projects will focus on efforts to upgrade technologies, retrain the work force, expand exports, and the like. The first project, now being organized, is in food processing.

Arkansas

Among the southern states, Arkansas has created one of the more comprehensive economic development efforts of the 1980s. Governor Bill Clinton, a Democrat, is better known for his education reform campaign, but he has also reformed an economic development system that was once a national model for smokestack chasers.

One new element is a fledgling Arkansas Science and Technology Authority, which makes basic and applied research grants, provides seed capital to new ventures, and funds incubators. Another is a new effort to encourage the investment of some of the state's $2 billion in public pension funds in Arkansas. Under one program the pension funds buy SBA-guaranteed loans from the banks, which promise to use the money to make new SBA-guaranteed loans. Under another the pension funds buy large certificates of deposit, while the banks pledge to use the money for business loans.

Clinton pushed through a series of bills relaxing the regulatory restraints on Arkansas banks, to encourage them to invest in businesses. He also replicated Indiana's Corporation for Innovation Development, although the 25 percent tax credit provided has not yet stimulated enough private investment to get the new fund off the ground.

Unlike most states, Arkansas has successfully revamped its vocational-technical training system. Over the course of five years it has increased the system's funding by 78 percent, established performance standards (such as job placement rates for graduates), and shut down 34 obsolete courses, while creating 40 new ones. Clinton has also tripled funding for literacy courses, an important move in a poor rural state like Arkansas.

Minnesota

Since the late seventies, Minnesota has created a series of new economic development programs, including a Small Business Finance Agency, a Minnesota Economic Recovery Fund, an Agri-Processing Loan Guarantee Fund, a Minnesota Rural Finance Administration, a Northeast Minnesota Protection Trust Fund (to help the depressed Iron Range), and a Minnesota Export Finance Authority (a loan guarantee program for small exporters). Most of these are classic retailing operations, but Democratic Governor Rudy Perpich's Council on Entrepreneurship and Innovation recommended a number of more innovative programs. Among the most interesting is the Enterprise Development Program, a $600,000-a-year matching grant program. Under this effort, local business-education-government coalitions apply for matching grants of up to $180,000 to create new centers to provide technical and managerial assistance to entrepreneurs.

Perhaps the most important of Perpich's innovations, however, is his reform of the state's Workers Compensation system.[5] Whereas most states have sought to bring down costs by cutting back benefits, Minnesota restructured the incentives in its system, so as to discourage litigation and encourage workers to return to work. For instance, if a partially disabled employee accepts a new job offer, he receives his disability payment in a lump sum. If the worker rejects a job offer, the payment is doled out in installments. This creates an incentive for the worker (and for his or her attorney, who stands to be paid more rapidly out of a lump-sum award) to rejoin the work force. In addition, the state no longer regulates insurance rates under the system; companies are now free to shop for the best rates from private insurance companies. The result of all this is declining litigation rates and shorter periods of disability.

Montana

In 1975, Montana voters created a 30 percent severance tax on coal mined in the state and dedicated 50 percent of the revenues to a trust fund to help the state cope with the environmental and social impact of coal mining. In 1982, another ballot initiative dedicated 25 percent of the coal tax trust fund to in-state investments to create economic development. Democratic Governor Ted Schwinden used the opportunity to create a comprehensive new investment program called "Build Montana," under which a new Montana Economic Development Board makes long-term, fixed-rate loans to businesses, in cooperation with participating banks. Another program created a 25 percent tax credit for investments in venture capital firms that buy equity in Montana firms, stimulating the creation of half a dozen new venture funds.

Schwinden has also funded a new Montana Economic Reporting and Forecasting System, at the University of Montana, to give the state the capacity to track and forecast economic developments. Another new university-based program is a Center for Business and Management Development, at Montana State University, which provides training and workshops for business people.

CHAPTER VI

LESSONS OF THE STATE EXPERIENCE

What lessons can we draw from the recent experimentation in state economic development policy? Which of these dozens of new programs appear to have the most constructive impact on our economy? And what are the implications for federal policy of this expansion of state government's role in the economy?

Before we address these questions, it is worth reminding ourselves that the new state programs are only one part of the picture. While it is important that America fashion new tools with which to heighten its international competitiveness, these tools will not work unless we also address the fundamentals which underlie the health of any economy: its fiscal and monetary policy; the quality of its education system; its infrastructure; the stability of its financial system. If federal policies push the dollar to record levels, programs to stimulate productivity in manufacturing will be overwhelmed by an avalanche of inexpensive imports. If 25 percent of young Americans cannot read and write, conventional training programs will be unable to prepare them for quality jobs in the changing economy. If our urban transportation systems are in such bad shape that businesses cannot rely on them, our cities will see their efforts to nurture new businesses overwhelmed by yet another wave of flight to the suburbs.

In an economy whose health requires knowledge-intensive industries and advanced technologies, these fundamentals become ever more important. During the industrial era, manufacturers looked for cheap labor, inexpensive land, low taxes, and easy transportation to their markets. Today, they look for solid school systems that produce literate workers – workers who can be trained and retrained as technologies change. They look for high quality universities and research institutions, to provide the supply of new ideas and technical expertise they need to stay ahead in changing international markets. They look for an attractive environment and quality of life, to attract and keep the highly-educated employees that make them successful. And of course they look for reasonable interest rates, tolerable inflation levels, stable tax rates, and predictable international exchange rates, so they can make long-term investments with some degree of certainty about the future. Any government that ignores these basics will be wasting its time worrying about more targeted economic development efforts.

These new realities explain why smokestack-chasing has been largely discredited. Subsidizing firms to locate in one area or another has always been a zero-sum game, from a national perspective. But for some areas – particularly those with low wages – it has attracted employers. Today, however, growth companies are more likely to be interested in an educated work force and a critical mass of research institutions than in tax concessions. By offering subsidies, states and cities are spending the very resources necessary to pay for education, research, and the like. And without these fundamentals, states that attract businesses this year are likely to lose them next year to Third World nations with even lower wages and taxes.

What Works and Why

The preceding chapters have provided brief evaluations of many of the programs discussed. Using the eight categories outlined in Chapter I, this section will amplify those observations – particularly in areas less extensively covered already, such as job training and efforts to bring the poor into the growth process.

Programs to stimulate technological innovation.[1] Most state efforts in this area have been aimed at stimulating interaction between businesses and university researchers. Because the U.S. excels at basic research but not at moving research breakthroughs into production, this is a rational goal for state government. Four models exist: the matching grant model, the research institute model, the academic department model (in which academic departments are given new funding and encouraged to interact with industry), and the university research park model.

The first model seems preferable, with the Ben Franklin Partnership providing the best specific example. The Partnership has the advantage of being decentralized, focused on more than one technology in each region, comprehensive, highly leveraged, and funded according to criteria which reinforce values such as private sector funding, job creation, and research work with small firms.

The research institute model is less desirable, because it is difficult to ensure that research institute priorities will be determined by industry needs rather than by academic preferences. This problem can be avoided by making the research institutes dependent upon private funding and contracts, but then they tend to be too expensive for small and new firms, which are important seedbeds of innovation. Indeed, large corporations often treat university research centers and institutes almost as philanthropies; they provide money, but they keep their important research to themselves. Most small and medium-size companies, on the other hand cannot afford to do their own research. For them, joint projects with universities provide their only access to serious research.

The academic department model is the least desirable, unless it is a first stage necessary to improve the quality of a research faculty and is followed by specific technology transfer programs. The dangers of simply pouring money into academic departments are obvious: most academic faculty live in a world whose incentives have nothing to do with economic competitiveness. The research that will move them ahead in their professions is unlikely to be directly useful to industry.

The research park model is also questionable. Putting corporate research departments in physical proximity to universities does not guarantee that there will be significant interaction. Nor do research parks necessarily spin off companies; Research Triangle Park in North Carolina, perhaps the most famous university research park, has generated virtually no spin-offs over several decades.[2] Without mechanisms to stimulate technology transfer and the formation of new companies, research parks may become little more than attractive settings for corporate research departments.

Programs to fill gaps in capital markets.[3] State capital programs have been the subject of lengthy discussion in preceding chapters. As that discussion has indicated, their experiences have been mixed. Too many retail public money; too few wholesale private money. And of those that retail, too few are well insulated from political pressures.

One fact of life discovered by those who run public capital funds is that capital is not a panacea. Too often the real problems with a business lie elsewhere; a shortage of capital may be simply a symptom. As lending programs have evolved, their managers have learned that they must provide intensive management assistance along with their loans, particularly when they are dealing with small businesses. This is extremely important. States that sponsor lending programs for small or minority-owned businesses should treat the technical assistance component as the most important element of their strategy.

One other point needs to be made about capital funds. Many states lend money to businesses at below-market interest rates, believing that this makes a significant difference in their ability to expand. At times it does, but on average, capital costs are such a small part of a business's overall expenses that a few percentage points less on a loan does not make or break a project. Many companies could proceed with a bank loan, but prefer the subsidized public loan because it saves them a bit of money. Unfortunately, it is extremely difficult to tell the difference between those who truly need lower interest rates to justify an investment and those who do not. Below-market rate lending programs, by their nature, tend to waste a state's resources.

Other state programs emphasize the availability of capital, rather than the cost. They provide market-rate loans (or equity investments) to companies that cannot get private sector investments – because they are too small, because they do not have enough collateral, because they are minority-owned, because their potential returns are not quite high enough to suit a venture capitalist's needs, and so on. This strategy of filling capital gaps encourages new players to enter the game, rather than merely subsidizing those who are already playing. In particular, it improves the odds for new and small firms – precisely the kind that make bankers nervous. Programs that channel capital to these firms can be of great importance. Given the choice of subsidizing firms, many of which can get private capital at slightly higher rates, or providing non-subsidized, market-rate capital to firms that cannot find private capital, states should lean towards the latter strategy. The long-term benefits are likely to be much greater.

Programs to encourage the growth of new and small businesses. Many of these programs, such as incubators, small business development centers, and small business ombudsmen, make sense. Others – particularly tax reductions for small businesses – have been too indiscriminate to be effective. David Birch, the MIT professor whose research first drew attention to the role that small businesses play in creating jobs, estimates that only 12 to 15 percent of small businesses are "entrepreneurial" – that is, they have the potential for significant growth. The rest employ a few people and will never do more.[4] Even some small growth companies are best understood as part of the local economy, rather than the state's economic base (a small restaurant or dry cleaning chain, for instance). If they went out of business, the demand for their services would simply shift to other local businesses, which would expand to meet it. Thus perhaps 90 percent of any subsidy broadly provided to all small businesses – such as a lower tax rate – will be money wasted. Most state loan, equity and incubator programs recognize this distinction and target specific firms. But tax breaks and technical assistance can be indiscriminate, and often are.

Programs to help manufacturing firms keep up with the latest production technologies. Previous chapters have discussed five "industrial extension" models:

- the Economic Stabilization Trust and Business and Financial Services program in Massachusetts, which uses loans and hands-on management assistance to turn around mature firms (this might be called the "turnaround model");
- the Ben Franklin Partnership model of matching grants to engineers and consultants who work with manufacturing firms (the "challenge grant model");
- the Industrial Technology Institute, in Michigan (the "applied research institute model");
- the Michigan Modernization Service, which contracts with private consultants to prepare detailed plans for the introduction of new technologies and the retraining of a business's work force, as well as helping the firm secure financing and find new markets (the "industrial extension agent model");
- and the Ohio Technology Transfer Organization and the Michigan Technology Transfer Network, which are information and referral services run out of universities or community colleges (the "academic referral model").

Of these, the Ben Franklin Partnership and the Michigan Modernization Service appear to be the best, because they are both activist and comprehensive. Massachusetts' program is also activist and comprehensive, but its target – mature firms on the verge of collapse – is too narrow. It should be complemented by programs which help manufacturers before they reach such dire straits.

The activist, comprehensive models are best because the clients of industrial extension services – managers of small and medium-size manufacturing operations – need more than information or advice from an academic expert. They need hands-on technical help, usually for an extended period of time. The process is simply too fraught with problems to be handled by most managers alone. Those who have purchased personal computers know how difficult and time-consuming it can be to sort through all the available information, choose the appropriate hardware and software, and teach themselves to use it – especially when time and finances are short. The process of installing computerized technology in a machine shop or manufacturing plant multiplies those difficulties a hundred times.

A study conducted by Jacques Koppel, former director of the Technology Management Center in Philadelphia, illustrates the problem. Koppel and his team spent 18 months interviewing the managers of 90 small and medium-size companies in the machine tool, electronic component and medical device industries. They found that only ten percent had any plans to introduce computers or other forms of advanced technology into their production processes. The reasons were revealing:

> The problem is not one of availability. It's that the new manufacturing technologies intimidate and confuse most managers, who thus resist adopting them. Even when these technologies are acquired, management is usually ill-prepared to implement them effectively.
>
> Compounding the problem is the reality that these technologies are computer-based, and managers and engineers schooled in another era often find them baffling. They have difficulty identifying the type of system that could most benefit their operations. And even if a firm can match a particular technology with a particular application, they often cannot distinguish between the dozens of available products – both hardware and software – that would best suit their needs.
>
> ...When companies make investments in new tools – whether modest or relatively large-scale – without an overall strategy for their use, the well-documented result is "islands of automation." Sophisticated technologies acquired at random sit scattered on shop floors, contributing only a fraction of their potential worth toward manufacturing a better product. In one company we visited, a $90,000 robot sat idle for most of two years because the equipment it was supposed to load was 25 years old and kept breaking down.[5]

Add to this the problem of retraining workers to operate computer-controlled machines and it is obvious that the adoption of new technologies is not a casual process. It requires industrial extension agents who will work with the company for months, help arrange training, and provide the troubleshooting needed to help the company join the microelectronic age.

Efforts to move labor-management relations toward cooperation rather than conflict. This is an area in which states have not yet done enough. The MILRITE Council in Pennsylvania was a first step. But even if it had been more strongly supported by the governor, the model was inadequate. States should pursue efforts similar to those in Pennsylvania, but they should go further, acting as brokers rather than simply as passive facilitators of new labor-management relations. By bringing their authority and resources to the table, governments can convince both sides to do more than they otherwise would. When government does use public resources, however, it should secure long term commitments from businesses to keep their plants open and to invest in the area.

In addition, states should seek to bring labor in as a central actor in economic development efforts, as the Cooperative Regional Industrial Laboratories (CRIL) program has in Massachusetts. This is important not only to improve the caliber of these efforts and to ensure that the interests of workers are considered, but to ensure that they enjoy broader political support than in the past.

Programs to stimulate exports. The best of the state export programs appears to be XPORT, the New York-New Jersey Port Authority's export trading company. As in the industrial extension area, exporting is so difficult that small and medium-sized firms need more than advice; they need comprehensive services over an extended period of time.

It may be that government's most constructive role in stimulating exports would be as a catalyst for the formation of private-sector export trading companies. If this is true, this may be an area in which the federal government is better equipped than the states. Few private trading companies would want to limit themselves to clients in one state; thus any state that subsidized the creation of trading companies would only capture a portion of the benefits. The closest thing to this model, XPORT, was created by an institution that serves two states and one of the busiest ports in the country.

Efforts to improve education and training systems.[6] Education reform is a broad topic on which much has been written in recent years; an evaluation of different state approaches is beyond the scope of this report. Training is equally important, but has not received the same degree of attention. Yet our training systems are certainly as weak as our education systems.

Training is crucial for several reasons. One is the nature of the changing economy. As discussed in the introduction to this report, our competitive advantage today lies in advanced technologies and flexible manufacturing, both of which require workers who can adapt to new technologies, learn new skills on the job, and craft new solutions as problems emerge. Yet many American workers do not have the basic educational background and coping skills necessary to play such roles. In addition, many American workers are now forced to undergo dramatic career shifts as basic manufacturing plants close or cut back and no similar jobs become available. For both these reasons, training is more important than it has ever been.

Another factor has to do with demographics. The baby boom is now fully integrated into the work force, and the cohort behind it is relatively small. According to Pat Choate, 85 percent of those in the labor force in 2001 will have been in the labor force in 1985.[7] This means that by the time the states began to think about education reform, most of their future workers were already out of school. Those people need training.

A third reason why training is so important today has to do with our ability to adopt new technologies and to embrace new relationships in the workplace, to heighten productivity and increase flexibility. If workers know that retraining is available and they will be able to find another skilled job that pays well, they are less likely to resist such efforts. If they know that there is a good chance they will be able to find nothing but a low-paid service job, they will rarely embrace new technologies or relationships.

Many states have done a good job of creating special worker assistance centers or emergency teams to respond to plant closings – as Massachusetts did with its Industrial Services Program. These efforts provide training to those laid off, help in finding new jobs, supplemental unemployment benefits, even financial assistance in moving to another area. But the states have not created similar programs to help workers threatened by technological change in plants that are not closing. Government has responded to highly visible emergencies, but has failed to create the ongoing retraining and re-employment systems needed by "dislocated" workers who lose their jobs one by one – the kinds of systems that can help businesses and employees adjust before the crisis comes.

Training by itself will not produce growth, create jobs, or end poverty. Other efforts are necessary to do that, as this report has argued. But a great deal of training and retraining is necessary to lubricate a rapidly changing, advanced-technology economy. It is also necessary if we are to have a chance of bringing the poor and disadvantaged into the mainstream of that economy.

In general, the states have not tackled the difficult job of rationalizing their chaotic training systems, although several states appear to be on the verge of doing so. This is one of the primary challenges facing state governments (and the federal government) today. Efforts to meet that challenge should be guided by a number of principles.

First, wholesaling is as important in the area of training as it is in development finance. The public sector does not – and in the future will not – pay for more than a fraction of the training provided to American workers. Hence the public sector must seek to create incentives that encourage private corporations to do more and better training – as Michigan did with its Saturn proposal.

Second, states should unify their dozens of training programs into one coherent system. This does not mean that all programs should be combined into one. Indeed, the states must learn how to serve very different populations: those who need remedial education and basic social skills; those who need specific skills necessary to handle specific jobs; and those who need more general "coping skills," to give them the knowledge and self-confidence necessary to handle rapid change and a variety of workplace demands. It does mean that for the individual who needs training, the system should ideally have one entry point. Those who need training should be able to visit one office in their local area, have an interview with one person who assesses their needs, and be steered to the appropriate program. The same "case worker" should follow the trainee through to completion of training and placement in a job.

Third, publicly subsidized training programs should be demand-driven. In the past, government training normally focused only on the supply side of the equation: the worker. Programs were set up to train the poor or black or young or unemployed, but few efforts were made to see that when they graduated, jobs were available. Today states are focusing on the demand side as well. They are creating programs that train people only for specific jobs promised by corporations, or that pay training contractors only after those trained have been placed in jobs. This is the direction in which our training system should move. To minimize "creaming," states should create demand-driven programs that serve specific populations, such as welfare recipients, the unemployed, the poor, and minorities. The Bay State Skills Corporation has shown that this can be done, simply by increasing the public subsidy as the target population becomes more difficult to train and employ.

Fourth, state training systems should be performance-based – although not to the point where they can only meet performance criteria by creaming, as has happened with JTPA. Programs should be evaluated and funded based on their placement rates, the quality of jobs secured for trainees, the wage rates secured, and the population served. This information should be publicized widely, to help the public act as intelligent consumers. States should also apply performance standards to their vocational-technical schools, as Arkansas and Florida have done. Programs that fail to meet the standards should be shut down; those that excel should be expanded. This is extremely difficult to do, because vocational-technical systems in most states are entrenched, resistant to change, and politically powerful. To reform them, states must lay off hundreds of instructors, train hundreds more, and buy a great deal of new equipment. But it can be done – as Arkansas has demonstrated.

Fifth, public programs should only train people for "good" jobs – ie., jobs that pay decent wages and have benefits. (The definition of "decent" will vary from one region to another, of course.) Studies indicate that the poor live a life of constant shuttling in and out of "secondary market" jobs – unskilled positions in marginal firms, with pay at or near minimum wages and few benefits. Except in extreme cases, training programs designed to fill these unskilled jobs are not necessary; they simply replace the untrained poor with the trained poor. In the process they waste public money and raise false hopes among those trained. When training programs enable the unemployed, or those in secondary market jobs, to move into primary market jobs, they break this cycle. They also open up positions in the vacated secondary market jobs – thus having as much impact on the unemployed poor as training programs for secondary market jobs.

Sixth, states should link their training programs to their economic development systems. Most states provide a variety of benefits to businesses: loans, tax-free bonds, tax breaks, loan guarantees, even equity investments. When they do so, they should ask in return that the company hire and train certain targeted groups. Obviously, government must be flexible in this area; a new high-tech company receiving equity from a state program cannot be expected to train a semi-literate high school dropout to work in a laboratory. But a few states and cities are beginning to work out flexible mechanisms. Arkansas requires that manufacturers receiving certain benefits hire a percentage of low-income workers. Washington, D.C., Portland, Ore., and other cities use "first-source" agreements, in which corporations receiving public benefits agree to use lists supplied by the government as their first source of interviews for new jobs. And New York has begun informal, firm-by-firm negotiations in which companies receiving state money agree to hire welfare recipients.

Seventh, states should reform their unemployment insurance systems so that benefits can be used to pay for retraining and re-employment. In most states today, unemployed workers are ineligible for unemployment benefits if they are enrolled in training programs – a requirement designed to ensure that they are actively looking for jobs. This is backwards. An unemployment insurance system should encourage retraining, not discourage it. California has not only passed such reform legislation, it has set aside a small portion of the payroll tax that business pays to finance unemployment insurance to create a customized retraining program for employees who are about to be laid off or who are already unemployed.

Finally, states should broaden their concept of training to include training for self-employment and entrepreneurship. These programs may be relevant to only a small percentage of the potential training population, but they make sense as one arrow in a state's quiver. To maximize their effectiveness, they could be linked to already existing small business development centers, incubators, and the like.

Several experimental programs in this area already exist. The Hawaii Entrepreneurship Training and Development Institute, a private, non-profit institution, provides intensive 12-week training sessions, internships with established firms, and other programs for poor and unemployed people who want to start their own small businesses. In Minneapolis-St. Paul, the private Women's Economic Development Corporation has successfully helped many poor women, some of whom were on welfare, to secure bank loans and start businesses. The Washington-based Corporation for Enterprise Development (CfED) is developing pilot projects in seven states to help small groups of welfare recipients set up their own businesses – home day-care, messenger services, word processing, and the like.

Efforts to bring the poor into the growth process.[8] Few states have given this much of a try. Massachusetts has done the most, and its efforts have served to demonstrate just how difficult a task this is. Indeed, bringing the poor into the growth process is the toughest challenge on the economic development agenda. It requires a comprehensive and distinct strategy, linked to the larger economic development strategy but made up of separate, highly targeted programs. Without such a "second track," even the best economic development program will do little for the poor.

Most of the new economic development strategies are designed to speed up the transition from an industrial to a post-industrial economy. They seek to increase technological innovation, encourage the automation of manufacturing, and nurture the growth of new industries built around advanced technology. These processes often work to the further disadvantage of the already disadvantaged – those who do not have the education or cultural background necessary to participate in advanced technology enterprises. A robust economy will bring some of the poor along, in construction and service jobs. But in the new economy, a rising tide will not lift all boats.

Many of the disadvantaged understand this. Workers in basic industries, minorities in the inner city, and the poor in rural areas know that new programs like the Ben Franklin Partnership or the Michigan Strategic Fund are of little use to them. Often, they are openly hostile to such efforts. Many workers equate "technological innovation" with the destruction of jobs. Thus a second track for the disadvantaged is necessary not only on social grounds, but to ensure broad political support for the first track. In a sense, each track is dependent upon the other. Without the second track, the first may fail for lack of political support. Without the first, the second may fail for lack of economic growth.

A full discussion of the possible elements of the second track takes us beyond the scope of this report. But a few observations are possible.

The goal of development efforts in poor communities must be to support an entrepreneurial process within those communities, a process that is generated from within and can at some point become self-sustaining. Growth does not occur because new buildings are constructed or housing is renovated in an area; growth occurs because people begin creating something of economic value, earning income, and reinvesting in the creation of more value. As experience has demonstrated time and time again, the most attractive housing developments or urban renewal projects create no real growth if they are filled with or surrounded by people who are unable to generate economic activity. They may improve lives, but they will not create a process through which people can pull themselves out of poverty.

This means that the principal actors in any development process must come from within the community. Outsiders can help. But without local community members in the driver's seat, little more than charity is possible. The most important role for government, then, is to help local people gain a momentum of their own – to help build the capacity of local entrepreneurs, community organizations and institutions.

A number of state governments, including those of Massachusetts, New York, Florida, Minnesota and Ohio, offer small subsidies to CDCs and related neighborhood organizations. Some provide technical assistance of one form or another. These efforts should be improved, enlarged, and, when possible, broadened to encompass other local actors, including local entrepreneurs. Some of the most notable success stories involve private-sector or quasi-public development organizations that go beyond the CDC model. These include South Shore Bank in Chicago, whose creators have used the bank and three affiliates – a CDC, a real estate development corporation, and a MESBIC – to turn around a black neighborhood; the Kentucky Highlands Investment Company, a CDC which used federal anti-poverty money (until 1981) to fund a venture capital firm that now creates 250 jobs a year; and the Delta Foundation, a not-for-profit foundation in Mississippi that has for-profit subsidiaries such as a revolving loan fund, a MESBIC, and a real estate development arm.[9]

When viable local institutions, entrepreneurs and networks exist in a community, major public investments can have the impact governments have long hoped for. At that point, government must be prepared to invest significant resources in housing rehabilitation, public works, job training, community service corps, and the like.

Large public investments are necessary for the simple reason that most of the private sector will not invest in poor communities. But government can, and should, steer some private capital into these areas. It can help create partnerships in which major private corporations and foundations join with government to fund intermediary organizations that invest in poor communities. (The Boston Housing Partnership is one example.) It can encourage socially minded investors, including corporations, foundations, religious groups and individuals, to invest in such intermediary organizations. It can offer tax advantages for investment in poor communities, as the federal government still does in housing. It can use its regulatory powers to require that banks and other financial institutions invest in poor communities – as the federal government does, to a limited extent, through the Community Reinvestment Act. And it can extract quid pro quos from the private sector when it grants regulatory or tax benefits, as cities are beginning to do through "linkage" programs. (Under one model, private developers who receive regulatory permission to build lucrative downtown projects are required to contribute to a development fund for poor communities, or to invest in a development project in that community.) As with public investments, of course, these efforts will pay off only if viable institutions exist in poor communities to make use of the investments.

Finally, government must overhaul its entire social welfare system, so that its fundamental mission is to move people into the economic mainstream, rather than to maintain them outside it, in poverty. Our social welfare system was originally designed, during the 1930s, to serve those who could not expect to participate in the economic mainstream: the elderly, the disabled, and widows with young children. Most of its clients were assumed to have no capacity to work; hence they needed state support. Over the years, however, the system has broadened to serve more of the poor, while social changes have brought women more fully into the workplace and increased the number of single mothers. Meanwhile, the stable industrial structure and steady growth on which the system depended has disappeared. Yet the fundamental structure of the system has not adapted to these new realities. It is time to change that structure, to revamp social services as an integral part of economic development. As the National Governors Association recently urged, it is time to change from a social welfare model, which provides income maintenance and leaves jobs as an afterthought, to a model in which jobs are primary and income maintenance is secondary.

The most obvious example is welfare reform. Massachusetts, California, Maryland, and other states have developed programs designed to provide welfare recipients with education, training, job placement, and often child care and health coverage for a period of time after they begin working. The basic principle in most of these programs is the same: when people go on welfare, the first step should be to assess their needs and abilities and to develop a plan to help get them back to work. From that assessment, people are steered to training and basic education programs, job search clubs, intensive ("supported work") programs for those who have the most difficulty, and so on. One important element, necessary to ensure that welfare recipients do not actually suffer an income drop by going to work, is a state subsidy for child care and health coverage.

Another ingredient of welfare reform – again noted earlier – involves linking welfare and economic development programs by asking businesses that receive public subsidies to hire and train welfare recipients. In a slightly different model, Pennsylvania offers tax incentives to firms that hire welfare recipients. Minnesota offers a six-month wage subsidy to employers who hire welfare recipients or other unemployed people not eligible for unemployment insurance. If the employers do not keep the person on after the subsidy expires, they must return 70 percent of the subsidy.

Housing is a second arena in which government's social welfare orientation is gradually changing. Traditionally, housing programs have simply provided apartments or housing subsidies for the poor. This is the welfare approach to housing. It amounts to little more than charity; it often separates poor people from the economic mainstream; and it fosters dependence. Over the past decade, however, declining resources have forced governments to seek new strategies. In particular, they have begun to look to CDCs, which have evolved into effective housing developers. They have also begun to let residents of public housing manage the buildings themselves. Thus government housing programs are beginning to shift from charities to efforts which build the capacity of local institutions and actors.[10]

Education and training programs should also be restructured to function as part of a comprehensive economic development strategy in poor communities. To do this, they should be tied to local development organizations, including CDCs, economic development corporations, and models like South Shore Bank. Corporation for Enterprise Development recommends that states finance "Neighborhood Learning Centers" in poor communities.[11] These would provide remedial education, job training and placement, and job creation through business development initiatives. The CDC affiliated with South Shore Bank in Chicago has launched a variety of programs that encompass all these activities, including an incubator and an effort to help women on welfare become self-employed. Other CDCs sponsor many components of the Neighborhood Learning Center model as well.

Still other models have been developed in Europe. In Great Britain, several hundred "Information and Technology Centers" offer training in high-technology careers to unemployed 16- to 18-year-olds. Some have even created viable businesses such as computer repair operations.[12] Elsewhere in Europe "industrial workshops" integrate drop-in centers for the young and unemployed with job training, incubator space, technical assistance, and other economic development activities.[13] These are glimpses of what is possible if education and training concepts in poor communities can be shifted from the social welfare model to the development model.

The Principles of Effective Economic Development

The specific development programs created by any particular state are less important than the way in which they are carried out: what principles guide their formation; how they fit into an overall strategy; and what principles underlie that strategy. The nature of the system – whether each piece works together to create a coherent whole – is far more important than the specific programs that make it up.

No formal methodology of economic development exists.[14] State efforts have been thoroughly experimental, fashioned by practitioners who have learned by doing. By looking carefully at their efforts, however, one can identify five principles that often spell the difference between success and failure.

1) State governments are most successful when they take time to thoroughly analyze the regional economy before acting. It is critical that policy makers understand the difference between the economic base and the local market economy, that they recognize the strengths and weaknesses of their economic base, and that they develop initiatives which grow naturally out of those strengths and seek to remedy those weaknesses.

2) The fundamental goal of government should be to change private sector investment patterns, not to substitute public for private investment. The amount of public money spent is a poor measure of the value of an economic development program. Even the largest government capital funds, training programs and the like are dwarfed by private capital markets and training expenditures. If government can use wholesaling strategies to change private sector investment patterns, it will have a far greater impact than if it simply sets up public programs. Wholesaling can be accomplished in a number of different ways:

- Government can *catalyze* the creation of new institutions or programs, as when Pennsylvania and Michigan initiated the creation of private BIDCOs and seed venture funds, and Massachusetts convinced the insurance industry to launch the Massachusetts Capital Resource Company.
- Government can *broker* private sector actions by bringing different parties together, as when the Ben Franklin Partnership and other state programs offer matching grants to bring businesses together with academic researchers.
- Government can *leverage* private sector action with small public investments, as in Michigan's Loan Loss Reserve program.
- Government can *change the rules* by which the marketplace operates, as when Michigan relaxed its regulations dealing with public stock offerings and franchise businesses, or many states amended their laws governing the investment of public pension funds.

While most of these examples deal with financial markets, the same models apply in other areas. Massachusetts' Bay State Skills Corporations is a catalyst, broker, and leverager in the job training area. The Michigan Modernization Service catalyzes and leverages private sector investments in new technology.

Government should retail its money only when the private market will not enter an area. This may be because it is a poor community where risks are high; because the private investor knows that his competitors will also reap the rewards of his investment (as in the case of much basic research); or because the private sector refuses to believe that the returns will outweigh the risks (as in the case, perhaps, with worker-owned firms).

But even where retailing is justified, government can use public-private partnerships to leverage private investment and teach private investors how to invest in an area. This is the strategy employed by Massachusetts' Community Development Finance Corporation and Government Land Bank. By co-investing with banks, these government programs are teaching the private sector how to exploit the profitable opportunities that exist in poor communities – and sharing the risk when necessary to justify private investment. Michigan's public pension fund unit does the same thing with private venture capitalists, introducing them to a market they have avoided.

3) The task of building local capacity and mobilizing local actors is critical. As noted above, economic development occurs in an area only if local institutions and entrepreneurs begin investing in the area, reaping profits, and reinvesting those profits – initiating a chain reaction that becomes self-sustaining. No amount of new roads, sewers, plants, convention centers or even businesses financed by government will do that, unless local actors become entrepreneurial themselves. Hundreds of southern towns that have recruited large manufacturing plants can testify to this fact. If no self-sustaining development process is touched off, the town will be no better off when the plant shuts down or moves again than it was before the plant was built. Economic development is not the process of creating new facilities; it is the process of stimulating new activity – by individuals, by small companies, by large companies, by community development corporations, by chambers of commerce, even by local governments.

There is no better way to mobilize local leaders than to bring them together to create new programs. This creates new relationships (between workers and managers, between financiers and manufacturers, between academics and business people), it fosters new ideas, and it creates a climate in which people begin to see that change is possible and government is there to support change. In addition, programs are far more likely to be successful if local people feel ownership of them than if they are handed down from above. In many ways, the process by which a new economic development program is developed is as important as the program itself.

4) Government should create comprehensive but decentralized development institutions. Economic development is a local process. Yet most state bureaucracies are not well equipped to respond to the varied needs of thousands of local businesses. The best solution is a network of decentralized intermediary organizations. These organizations use state resources and carry out state objectives, but they have the flexibility to respond to a wide variety of specific, local problems. They also enjoy the daily contact needed to become rooted in and develop credibility in local communities, and they have the capacity to make decisions quickly. The best examples are Pennsylvania's Advanced Technology Centers and Local Development Districts.

These intermediary organizations should be as comprehensive as possible. The needs of local actors in the economic arena are practically infinite. Well-designed programs which address one of those needs – for seed capital, for instance – are important. But the same entrepreneur who needs seed capital may need managerial assistance, or a research contact at the local university. If economic development resources are spread among a dozen different organizations, they will be difficult for local business people to use. If they are carried out under the same roof (even if by different staffs), access is much simpler. They will also be simpler for government to advertise, as Pennsylvania has discovered with its Ben Franklin Partnership.

5) Economic development programs should not be static. Ideally, they should have built-in feedback mechanisms that force them constantly to adapt to changing circumstances. The marketplace does not stand still. Too often, government programs do. Capital funds targeted at specific gaps sometimes fail to adjust when those gaps close. Training and vocational programs emphasizing specific skills often continue unchanged, long after those skills become outdated. By building in performance standards and other measures that flag changes in the marketplace, and by structuring programs in ways that preserve flexibility and minimize bureaucracy – as Massachusetts has been able to do with its quasi-public agencies – governments can design programs that adapt rather than calcify.

The Federal Role

For nearly 60 years, American liberals have looked to Washington for solutions to the nation's problems. Even conservatives who have become acclimated to national power often assume that no government program is truly important until it is carried out by the federal government. Thus it is common, particularly in Washington, to assume that the experimentation taking place at the state level today is important primarily because it will provide models for new federal programs.

At the state level, in contrast, many governors, legislators and policy-makers fear this impulse. They complain that the federal government is too far from the problems addressed by state government to act intelligently and to remain accountable to local voters. They argue that Congress has proven itself unable to discriminate between the needs of one region and those of another – that it cannot target programs to areas of need, but inevitably spreads them around for all to share. And they speak from bitter experience about what poor partners federal bureaucrats make, because they are so often unwilling to let local actors control programs.

This is clearly an important issue. There is a danger that the federal government, in a rush of enthusiasm for American "competitiveness," will simply round up the best state programs and legislate them into federal law. If this happens, without a careful sorting of the appropriate level for each form of intervention, we will create a new round of problems.

Let us begin this discussion with a simple observation. The American economy, indeed the world economy, is made up of a series of regional economies, each of which radiates out from a city or network of cities.[15] Each regional economy is unique. Each has a different mix of industries, a different labor market, a different set of educational institutions, even different capital markets, despite the existence of national and international financial markets. In this country, the governmental unit that most closely matches the regional economy is the state. The fit is hardly perfect. Regional economies radiating out of Boston and New York each spill into three states, for instance, while California encompasses perhaps half a dozen distinct regional economies. But short of a utopian scheme to redraw state lines, the current states are the closest thing we have to government with jurisdiction over specific regional economies.

Macroeconomic policy deals with questions that, for the most part, are national in scope: fiscal and monetary policy, tax policy, trade policy. Microeconomic policy deals, in contrast, with matters that vary a great deal from one regional economy to another. While Indiana may have a severe shortage of risk capital, Massachusetts and California do not. While Massachusetts may have a tight labor market, in which employers will pay for training because they are desperate for workers, Michigan does not. While Pennsylvania may have strong engineering schools and research institutions, Arkansas does not. Hence the design of any program that involves microeconomic intervention must be specific to one region. 'Cookie cutter' models imported from one state to another – or crafted solely in Washington – will not do the job.

Past experience suggests that the federal government is not well equipped to develop different models in different regions of the country. Nor is it good at limiting its efforts to those regions that need them most; when money is involved, every legislator seeks a share for his or her constituents. The Economic Development Administration was created to stimulate development in poor communities; the definitions of 'poor' were rewritten until 80 percent of the nation was eligible for EDA grants. The Appalachian Regional Commission was set up to address the particular problems of Appalachia; the definition of 'Appalachia' was stretched until all of Pennsylvania was eligible except for Philadelphia and its environs.

There are also problems of scale. Federal programs, because of their size, will normally be more bureaucratic than state programs. In any institution, size leads to bureaucracy and rigidity. Federal programs will also be less directly accountable to the voters than most state or local efforts.

At the same time, there are limits to what can be achieved at the state level. States cannot deal with macroeconomic policy. Nor can they deal well with problems affecting entire industries, because industries cross state lines. Labor-management relations are embedded in a network of federal legislation and judicial interpretation, leaving states powerless to effect many basic changes. Much regulation of capital markets is national in scope. The capacity to export is dependent on many factors beyond the control of state governments. And in many areas involving regulation and taxation, states either cannot act alone, for fear of driving business away, or should not act alone because state-by-state regulation (of product safety standards, for instance) would create administrative nightmares for business.

Finally, states have a resource problem. Because states feel that they are competing with one another for industry, there are severe pressures to keep taxes low. This makes it difficult for any state to come up with the funding necessary to deal with certain problems that require substantial investment, such as job training and low-income housing. In addition, regions that need the most investment, such as Appalachia, have the least ability to make that investment. Poverty is a vicious cycle; if we are to redistribute resources from wealthy regions to poor regions, the federal government will be instrumental.

These realities suggest a relatively simple rule of thumb. In the microeconomic arena, when the appropriate model differs from one region to another, programs should be run by the states. The federal role should be to provide financial support; to create financial incentives for states to act; to offer subsidies to poor states; to evaluate state efforts; and to experiment with new models. When problems transcend the capacities of individual states, on the other hand, the federal government should create its own programs.

The former category would ordinarily include most industrial extension programs (except those targeted at large, multi-state firms); many programs to nurture the growth of new and small businesses, such as incubators and small business assistance programs; most programs to fill gaps in regional capital markets; most education and training programs; and most efforts to bring the poor into the growth process.

In these areas, the essential federal role should be to provide matching funds to create incentives for the states to sponsor programs. The Democratic

Policy Commission, two-thirds of whose members were state and local officials, recently recommended a Strategic Investment Block Grant for states in which the unemployment rate exceeded the national median by ten percent.[16] The idea might well be extended to other areas, such as welfare reform, low income housing, and job training. (JTPA already bears some resemblance to this model; it is funded by the federal government but the programs are run by states and local organizations.)

The block grant idea could be further refined, however, by adopting a challenge grant model to allocate the money. Rather than simply dividing federal funds up equally between those states which qualify, the federal government could set up criteria by which to judge state applications for funding. They would be related to two factors: the degree of need (unemployment rates, poverty rates and median income), and the quality of the state program (the degree of wholesaling and private investment leveraged, the degree of targeting to poor communities, the degree to which economic development programs are decentralized, and so on). States would be funded according to how well their programs met these criteria – thus rewarding areas of need but also creating incentives for states to design effective programs. In addition, the greater the difficulty of leveraging private capital in a particular arena, the higher might be the federal share of funding. Thus for low-income housing, or job training for welfare recipients, the federal government would finance far more of the total costs than for technology programs or capital funds. This kind of mechanism would create incentives for states to act while allowing the federal government to exercise some quality control. But it would leave the job of actually designing and running programs to the states.

The federal government could also improve the quality of state programs by prohibiting the use of federal money or tax exemptions to lure plants from one state to another. It could change a variety of regulations to allow more flexibility at the state level; for instance, it could permit the use of welfare grants and unemployment benefits for training, wage subsidies, self-employment efforts, and the like. And it could improve both state and federal efforts by upgrading its capacity to collect data on and analyze the American economy. Federal data collection and analysis is hopelessly fragmented and out-of-date, leaving those engaged in economic development at every level to fly blind much of the time.

The second category – areas in which the primary responsibility must be at the federal level – would include international trade, intervention in national capital markets, responses to the problems of entire industries, environmental policy, and basic research. It would also include a host of areas shaped by federal law, such as antitrust policy, questions involving patents and trademarks, bankruptcy law, and so on. These legal frameworks play an enormous role in shaping the American economy, and they must be dealt with in any effort to enhance our economic competitiveness.

Finally, in several areas both the federal and state governments have important roles to play. In labor-management relations, for instance, state governments can do a great deal. But in some industries, such as auto production, bargaining is essentially national. In addition, labor relations are shaped by a web of laws and judicial precedents, many of which are national in scope. If we are to move from an adversarial model to more cooperative relationships, in which workers have more control over decision-making and management has more flexibility regarding work rules and job classifications, that legal framework must be addressed.

There will also be situations, particularly those involving national unions that do not allow a great deal of flexibility to their locals and national management that does not allow a great deal of flexibility to local management, in which the federal government must act as a broker. Many industries have pushed hard in recent years for changes in work rules, while unions have pushed hard for job security. The federal government might be able to improve the bargaining process – and encourage a more cooperative culture – by bringing resources for retraining and re-employment to the table. It might revamp the unemployment insurance system to encourage firms to move surplus workers to special projects during recessions, as the Japanese do, rather than laying them off. Experience demonstrates that workers with increased job security are far more willing to help companies improve productivity. Finally, a number of economists have suggested that if part of workers' and managers' wages were paid in the form of bonuses, based upon increases in productivity, profits, or value added per hour of work, workers and managers would be more committed to the long-term health of their companies. Lester Thurow has proposed that the federal government nudge firms in this direction by exempting bonuses from payroll taxes.[17]

Another area in which the states and the federal government must share responsibility is applied research. When local business people and academics are intimately involved in shaping applied research programs, the programs are far more likely to respond to genuine needs than if they had been crafted in Washington. But there are some needs that state programs simply cannot meet. Consider, for instance, a large-scale project to design a new production process or a new generation of technology, in which most of the major corporations active in an industry participate. One example is the Microelectronic and Computer Technology Corporation in Austin; another is a proposed $250 million research effort in semiconductor manufacturing, known as Sematech. Because these projects are national in scope, benefiting an entire industry rather than local businesses, state governments have neither the incentive nor the resources to subsidize them. In addition, they require waivers under federal antitrust law. Such projects will seldom get off the ground without some involvement by the federal government.

The federal government is already a major player in applied research in addition to funding half of all basic research done in the United States. The National Science Foundation, for instance, has sponsored a series of centers designed to stimulate joint research by industry and academia. Recent amendments to the Stephenson-Wydler Act encouraged the federal government's 400 research laboratories to foster the commercialization of their research. And the Defense Department finances a Manufacturing Technology Program to encourage innovations in new production processes, an Industrial Modernization Incentive Program to speed up the adoption of new production processes, and several large projects in the development of advanced computer technology. These federal programs need to be pulled together and rationalized under an institution similar to the NSF, whose purpose is to provide matching grants for large applied research projects that lie beyond the capacity of state governments. There is no sense in allowing the Defense Department, whose basic responsibility is not economic competitiveness but national defense, to play this role by default.

Yet another area in which both the federal and state government have responsibilities is intervention in our capital markets. Despite the recent dismantling of barriers to interstate banking, our banking system remains decentralized, with each state having different institutions and markets. But much of the rest of our capital markets are national in scope; hence any efforts to improve their operations must come from Washington.

One problem that the federal government might address is the short-term perspective forced on many companies by the nature of our capital markets. The fact that American firms rely on equity more than debt creates incentives for corporate managers to focus on short-term profitability rather than long-term market position – since the stock market reacts so strongly to short-term factors such as quarterly earnings. Even the venture capital markets have become more focused on the short term over the past decade; most venture capitalists now look for a three-to-five year return. In Japan, by contrast, capital markets encourage corporations to keep their long-term health uppermost in mind. "This is because equity in Japan is held mainly by the banking sector, which is also the provider of business debt," according to Susan Friedman, former research director of Massachusetts' Mature Industries Commission, and S.M. Miller, a professor at Boston University. "As a result, bankers are less concerned about short-term profitability than they are with the ability of companies over the long term to pay back their loans and remain viable well into the future. Concentrated equity ownership gives them the ability to influence corporate strategy."[18]

The federal government could attack this problem in many ways – through legislation, through Federal Reserve Board policy, or through regulatory changes. Some economists argue that the Glass-

Steagall Act, which prohibits commercial banks from owning securities, should be repealed. Friedman and Miller suggest several other reforms that might encourage investors to be more patient.[19] Tax policy, for instance, could reward stockholders who hold securities for longer than a set period of time, say three years. The European Common Market requires labor representation on corporate boards of directors, in part to ensure that spokespersons for the long-term interests and viability of the firm are present. And in Sweden, companies are required to allocate a percentage of their income to a fund that can be used only at particular times (usually during recessions) or long-term investments.

Michael Kieschnick, a former economic policy adviser to Jerry Brown, ex-governor of California, has recommended a number of other intriguing ideas. One is a capital gains tax incentive for investment in start-up companies, particularly if the gains are reinvested in additional start-ups.[20] Another is a federal effort to create a secondary market for business loans, similar to the secondary markets for mortgage loans established by the Federal National Mortgage Association, the Government National Mortgage Association, and the Federal Home Loan Mortgage Corporation. Kieschnick's mechanism would be a Technology Development Mortgage Assistance Corporation ("Teddie Mac"), which would package and insure pools of long-term, fixed rate loans to high technology companies and other firms modernizing their capital bases. It would sell securities backed by those pools – and partially insured by Teddie Mac and the originating lender – to institutional investors like pension funds and insurance companies. The point is to make long-term capital from institutional investors available to small and medium-size businesses, and to provide a way for banks and savings institutions to resell business loans and thus increase their volume of such loans.[21]

A few states have attempted to respond to the problems of particular industries, but this is another area in which the federal government must take the lead, simply because most of those industries are national in scope. The state of Michigan can work with the auto industry by offering an innovative partnership based in one plant. But if it attempted to address the overall problems of the industry, it would have no leverage anywhere but Michigan, while the benefits of its investment would be spread over many states.

When a multi-state industry is suffering the effects of foreign competition, for instance, only the federal government can help. Often that help has taken the form of trade protection. In cases of dumping and other unfair trade practices, such a response may be justified. But in general, the federal government should be encouraging troubled industries to develop plans to restructure themselves into world-class competitors, then providing what is necessary in the way of retraining investments, loan guarantees and the like to make the restructuring possible. "In the rest of the world," writes Thurow, "it would be completely normal to ask the members of a sick industry – the firms, the unions, the suppliers, the banks, the communities – to sit down and determine what part of the industry could be saved and how the industry could work together to strengthen itself. Competing firms might for example work out a shutdown of the most technologically obsolete facilities in such a way that it did not alter the relative competitive strength (market shares) of the firms being asked to shut down excess capacity."[22] Thurow advocates a government restructuring board to play this role and a public investment bank to provide up to half the capital necessary in any major restructuring.

Robert Reich has suggested another mechanism to deal with problems of overcapacity in industries such as steel. Under this scheme, the United States would help establish an international "adjustment fund" to reduce capacity in basic steel.[23] Nations would pay into the fund based upon their share of steelmaking capacity; they could withdraw from it based upon the amount of capacity they reduced in any given year. The withdrawals could be used for severance payments, retraining, re-employment assistance, and economic development efforts to stimulate the growth of new industries in the affected areas. Within the U.S., the government might establish a business-labor- government-community board to negotiate the precise use of such funds.

Federal policy to encourage restructured and more efficient economic sectors must recognize the social costs, as well as the benefits involved. When successful, economic restructuring often has the effect of increasing the dislocation experienced by workers and communities. For example, in the 1940s and 1950s the successful federal efforts to increase productivity in agriculture led to sudden and dramatic migration of rural Southern blacks to Northern cities. Many of today's urban problems (poverty, joblessness, social strife) can be traced to lack of anticipatory planning during this earlier restructuring.

Finally, the federal government could learn a great deal from the success that state governments have had in rationalizing their economic development efforts. Massachusetts, Pennsylvania and Michigan have all created some form of economic development cabinet, made up of every department whose responsibilities overlap with economic matters. These cabinets heighten the visibility of economic development and allow governors to enforce their priorities throughout the bureaucracy. They provide a central staff whose vision is firmly on the overall goal of economic growth, rather than on the parochial concerns of a transportation or commerce or labor department. Clearly, some variant of this model is needed at the national level.

Within the federal behemoth reside dozens and dozens of programs that help shape the American economy; indeed, the federal government has more than $1 trillion in loans and loan guarantees outstanding. But each of these programs operates independently. Viewed as a whole, the federal economic apparatus is a bundle of conflicting impulses, with no overall rationality, no cohesion, no guiding strategic vision. One solution often put forth is to copy Japan's Ministry of International Trade and Industry. Another would be to copy the states by creating an economic cabinet with its own staff.

These examples only scratch the surface of what the federal government could do to heighten American competitiveness. More important than specific proposals, at this point, are the principles that should guide federal intervention – the same principles that we have drawn from the experience of state efforts. These are the real lessons of state level experimentation for the federal government: not *what* it should do to intervene in the marketplace, but *how* it should intervene. Federal programs should be built on solid analysis of the economy; they should seek to change private investment patterns rather than substituting public capital for private; they should insulate public investment funds from political manipulation; they should build local capacity; they should create feedback mechanisms; and so on. These principles define the appropriate methodology for a new wave of federal economic activism.

The principle underlying this entire discussion, of course, is that government does have an active role to play in the economy. While Washington has been mired in an ideological stalemate over this issue, governors from both parties have embraced it. The governors' activism differs from the traditional liberal response to economic troubles – an emphasis on social welfare. But it also differs from the traditional conservative approach, in which government purports not to interfere with the workings of the "free market." It respects the market, but it recognizes that markets do not operate freely or perfectly. The new activism flows from the bedrock assumption that government must facilitate the workings of the market – correcting flaws, changing rules, and altering the trajectory of private investment. That is the real lesson of the state government experience in the 1980s: government does indeed have a role, but the old role models are obsolete. New designs are needed – and the states are providing them.

GLOSSARY OF ACRONYMS

ARC	Appalachian Regional Commission
ATC	Advanced Technology Centers (PA)
BFP	Ben Franklin Partnership (PA)
BFS	Business and Financial Services section of ISP (MA)
BIDCOs	business and industrial development corporations (MI)
BSSC	Bay State Skills Corp. (MA)
CAD/CAM	computer-aided design / computer-aided manufacture
CDC	community development corporation
CDFC	Community Development Finance Corp. (MA)
CEDAC	Community Economic Development Assistance Corp. (MA)
CEED	Community Enterprise Economic Development program (MA)
CNC	computer numerically controlled [machine tools] (MI)
CRIL	Cooperative Regional Industrial Laboratories (MA)
EDA	Economic Development Administration
EOL	Executive Office of Labor (MA)
ERIM	Environmental Research Institute of Michigan
EST	Economic Stabilization Trust (MA)
IAB	Industrial Advisory Board (MA)
ISP	Industrial Services Program (MA)
ITI	Industrial Technology Institute (MI)
JTPA	Jobs Training Partnership Act
LDD	Local Development Districts (ARC- and EDA-funded)
MAP	Manufacturing Automation Protocol (General Motors) (MI)
MBDC	Massachusetts Business Development Corp.
MBI	Michigan Biotechnology Institute
MCHT	Metropolitan [Detroit] Center for High Technology (MI)
MCRC	Massachusetts Capital Resource Co.
MESBIC	minority enterprise small business investment company
MIFA	Massachusetts Industrial Finance Authority
MIP	Manufacturing Innovation Partnership (MI)
MIT	Massachusetts Institute of Technology
MMS	Michigan Modernization Service
MPDC	Massachusetts Product Development Corp.
MSF	Michigan Strategic Fund
ONES	Office for New Enterprise Services (MI)
OTTO	Ohio Technology Transfer Organization
PERF	Pennsylvania Economic Revitalization Fund
PIDA	Pennsylvania Industrial Development Authority
SBA	Small Business Administration
SDA	Service Delivery Administrators (under JTPA)
TDS	Technology Deployment Service (MI)
TTN	Technology Transfer Network (MI)

STATE INDUSTRIAL COMPETITIVENESS PROGRAMS: MASSACHUSETTS, PENNSYLVANIA, MICHIGAN

	MA	PA	MI
PROGRAMS TO STIMULATE TECHNOLOGICAL INNOVATION			
Applied Research Centers		■	■
Matching Grant Programs	■	■	
Research Parks			
Comprehensive Technology Programs		■	
Small Business Innovation Research Grants			
CAPITAL PROGRAMS			
Industrial Revenue Bonds	■	■	■
Business Loan Funds	■	■	■
Turnaround Banks for Mature Industries	■		
Public or Quasi-Public Venture Capital Funds	■		■
Public or Quasi-Public Seed Capital Funds	■		
Public Pension Fund Investments in Venture Capital		■	■
Tax Incentives For Investments in Private Venture Capital Funds			
Public Pension Fund Investments in Business Loans		■	
Public Investments in Private Seed Capital Funds		■	■
Public Investments in Private BIDCOs (business and industrial development corporations)			■
Loan Loss Reserve Programs			■
Linked Deposit Programs			
PROGRAMS TO HELP NEW AND SMALL BUSINESSES			
Business Assistance Centers	■	■	■
Small Business Incubator Programs		■	■
Small Business Ombudsmen/Regulatory Assistance		■	■
Procurement Assistance		■	
Regulatory Changes to Help Small Businesses	■	■	■
Entrepreneurial Training			
Comprehensive Entrepreneurial Assistance Programs		■	

	MA	PA	MI
TECHNOLOGY TRANSFER PROGRAMS (TO HELP MANUFACTURING FIRMS KEEP UP WITH THE LATEST TECHNOLOGY)			
Industrial Extension Services		■	■
Academic Referral Services		■	■
Applied Research Institutes on Manufacturing Technology		■	■
Matching Grant Programs		■	
Comprehensive Technology Transfer Programs			■
LABOR-MANAGEMENT COOPERATION PROGRAMS			
Grants to Labor-Management Committees		■	■
Tripartite Labor-Management-Government Boards	■	■	
Technical Assistance for Employee Ownership	■	■	■
Financing for Employee Ownership			■
HUMAN CAPITAL (EDUCATION AND TRAINING) PROGRAMS			
Public K-12 Education Reform	■	■	
Higher Education Initiatives	■	■	■
Vocational-Technical Education Reform			
Adult Literacy Programs	■		
Comprehensive Reform of Job Training Systems			
New Job Training Programs	■	■	■
Adjustment Programs for Dislocated Workers	■	■	
Diversion of Unemployment Insurance to Training			
Wage Subsidies for On-the-Job Training			
Training Vouchers			
EXPORT PROGRAMS			
Technical Assistance for Exporters		■	
Export Trading Companies			
Export Financing		■	
Export Insurance			
Mentor Programs			
PROGRAMS TO BRING THE POOR INTO THE GROWTH PROCESS			
Employment and Training Programs for Welfare Recipients	■		■
Incentives for Employers to Hire Welfare Recipients	■	■	
Use of Welfare Grants as Wage Subsidies	■		
Enterprise Zones		■	
Minority Loan Programs	■	■	■

	MA	PA	MI
Administrative Grants for Community Development Corporations	■		
Technical Assistance for Community Development Corporations	■		
Programs Which Use Community Organizations as Housing Developers	■		
Programs Which Use Community Organizations in Economic Development		■	
Real Estate Development Banks	■		
Community Reinvestment Policies	■		
Targeting State Grants and Loans on Poor Communities	■	■	
Local Community Development Banks			

THE PRINCIPLES OF EFFECTIVE ECONOMIC DEVELOPMENT

	MA	PA	MI
Performance of a Study of the State Economy		■	■
A Focus on Wholesaling		■	■
A Focus on Building Local Capacity	■	■	
Creation of Comprehensive, Coordinated Economic Development Systems		■	■
Creation of Decentralized Development Institutions		■	
Creation of Market Feedback Mechanisms	■	■	■

FOOTNOTES

Chapter I: Introduction

1. Nine percent, 22 percent, and 70 percent figures: Robert B. Reich, *The Next American Frontier*, New York, Penguin Books, 1984, p. 121. Twenty percent figure: Allegheny Conference on Community Development, *A Strategy For Growth: An Economic Development Program for the Pittsburgh Region*, Pittsburgh, 1984, Vol. 1, p. 14.

2. U.S. Department of Commerce, *National Income and Product Accounts, Preliminary Second Quarter 1987 (GNP)*; Revised Estimates; 1984-first quarter 1987; News Release, July 24, 1987. 1959-1983 GNP calculations: *Economic Report of the President 1987*, p.253.

3. Statistics for the years 1947-1982 are from Lester C. Thurow, *The Zero-Sum Solution*, New York, Simon and Schuster, 1985, p. 50. Statistics for the years 1983-1986 are from *The Boston Globe*, February 3, 1987, p. 34.

4. David Jones, ed., *Building the New Economy: States in the Lead*, Washington, D.C., Corporation for Enterprise Development, 1986, p. 78.

5. Thurow, *op. cit.*, p. 31. Thurow estimates that in 1984 the trade deficit of $123 billion cost American workers three million jobs.

6. Arthur M. Schlesinger, Jr., *The Age of Roosevelt, Vol III: The Politics of Upheaval*, Boston, Houghton Mifflin, 1960, p. 520.

7. James Botkin, Dan Dimancescu, and Ray Stata, *The Innovators*, New York, Harper and Row, 1984, p. 135.

8. James Gollub, *Financing Innovation in Enterprise: Beyond Venture Capital*, Menlo Park, Stanford Research Institute, 1985, p. 35.

9. W. John Moore, "High-Tech Hopes," *The National Journal*, November 15, 1986, p. 2769.

10. Bruce G. Posner, "Inc.'s Fourth Annual Report on the States," *Inc.*, October, 1984, p. 108.

11. *New York Times*, Jan. 27, 1985, p. 12F.

12. David Birch, *The Job Generation Process*, Cambridge, M.I.T. Program on Neighborhood and Regional Change, 1979.

13. The data on business incorporations are from Birch, "The Atomization of America," *Inc.*, March, 1986, p. 21. (Birch's source is The Commerce Department, which collects business incorporation data from secretaries of state in the 50 states.) The data on Fortune 1000 firms and numbers of people self-employed or running businesses are from Roger J. Vaughn, Robert Pollard, and Barbara Dyer, *The Wealth of States: The Political Economy of State Development*, Washington, Council of State Planning Agencies, 1985. (Their sources are *The State of Small Business*, Small Business Administration, Washington, 1983, and *Employment and Training Report of the President*, U.S. Department of Labor, various years.) They report that one-sixth (17 percent) of those in the work force now run a business or are self-employed. According to the Bureau of Labor Statistics, 17.5 percent of the work force belonged to a union in 1986.

14. Reich, *op. cit.*, p. 263.

15. Commerce Department survey: *The Washington Post*, Sept. 23, 1985, Business Section p. 27. Twelve states: Mt. Auburn Associates, *Final Report and Recommendations to the Massachusetts Special Legislative Commission on Small Business Incubators*, Somerville, MA., 1986, p. ii. Number of incubators: *The Washington Post*, June 30, 1986, Business Section p. 1, citing the National Business Incubation Association.

16. *The Washington Post*, Feb. 17, 1985, p. E6.

17. For more information on state export programs see *State Export Promotion Activities*, U.S. Small Business Administration, October, 1984, and SRI International, *Innovations in Industrial Competitiveness at the State Level*, President's Commission on Industrial Competitiveness, December 1984.

Chapter II: Massachusetts

1. Ronald F. Ferguson and Helen F. Ladd, "Economic Performance and Economic Development Policy in Massachusetts," Discussion paper D86-2, John F. Kennedy School of Government, Harvard University, May 1986. (This paper is a chapter of a forthcoming book on state economic development efforts prepared by the Committee for Economic Development: R. Scott Fosler, ed., *The New Economic Role of the States: Strategies In A Competitive World Economy*, New York, Oxford University Press, 1988.)

2. "1975-1985: The Massachusetts Government Land Bank Tenth Anniversary Report," The Massachusetts Government Land Bank, Boston, MA, 1985, p. 3.

3. Neal R. Peirce, Jerry Hagstrom, and Carol Steinbach, *Economic Development: The Challenge of the 1980s*, Council of State Planning Agencies, Washington, D.C., 1979.

4. *An Economic Development Program for Massachusetts*, Massachusetts Office of State Planning, 1976, pp. 2,5.

5. "Massachusetts Technology Corporation Annual Report, 1986," p. 5.

6. *Ibid.*, p. 2. MTDC's gains include over $4 million in stock holdings from companies that have gone public. These were technically considered "unrealized gains" as

of 1986, because of MTDC's accounting procedures.

7. See Ferguson and Ladd, *op. cit.*, p. 69, and James Botkin, Dan Dimancescu, and Ray Stata, *The Innovators*, Harper and Row, New York, 1984.

8. Sources for the discussion of MCRC include interviews with Foster Aborn, Belden Daniels (who staffed the Task Force on Capital Formation), Frank Keefe (the director of the Office of State Planning and chairman of Dukakis's Development Cabinet), Michael Barker (who then worked for Keefe), Martin Miller, and other Wang Laboratories spokesmen. See also Ferguson and Ladd, *op. cit.*, pp. 67 and 162, and MCRC's annual reports.

9. Sources for the discussion of CDFC include interviews with Charles Grigsby, Belden Daniels, Carl Sussman, Beth Siegel, and others; Belden Daniels, Beth Siegel and Steven Klein, *The Community Development Finance Corporation: A Review and Action Plan*, Counsel for Community Development, Cambridge, MA., 1982; a case study of the Adams Print Works deal prepared at the John F. Kennedy School of Government, Harvard University, by Howard Baker-Smith, Lucy Gorham, Lindsay French, and Frederick Mayer, under the supervision of Robert B. Reich; Margaret Pantridge, "Anatomy of a Bailout," *The Berkshire Review*, January 25, 1985; and other articles.

10. The discussion of the Land Bank is based on interviews with Timothy Bassett, Beth Siegel, and others, as well as "1975-1985: The Massachusetts Government Land Bank Tenth Anniversary Report," *op. cit.*

11. The best example of this model is the Shorebank Corporation in Chicago, which owns a bank, a real state development firm, a CDC, and a MESBIC. Since it was established in 1973, Shorebank has been quite successful in turning around a black community that appeared headed for the bottom. See David Osborne, "Bootstrap Banking," *Inc.*, August 1987, pp. 69-72. Shorebank can be contacted at 7054 S. Jeffrey Blvd., Chicago, IL, 60649.

12. Carl Sussman, interview with author.

13. The discussion of the Bay State Skills Corporation is based on the "Commonwealth Employment Forum Report," Massachusetts Office of Training and Employment Policy, 1985; "The Massachusetts Job Training and Placement Puzzle," Ma. Senate Committee on Ways and Means, 1986; Ferguson and Ladd, *op. cit*; and interviews with Catherine N. Stratton, Associate Secretary for the Massachusetts Office of Training and Employment Policy; George Hughes of the Bay State Skills Corporation, and others.

14. Charles Kenney, "Why Not the Duke?", *The Boston Globe Magazine*, January 4, 1987, p. 19-36.

15. See David Broder, "New Deal-Making Politics: Massachusetts Governor Develops a Machine," *Washington Post*, Feb. 10, 1986.

16. Michael Dukakis, interview with author.

17. For background on the Mature Industries Commission see Ferguson and Ladd, *op. cit.*, pp. 112-122; and Samuel Leiken, "The Governor's Commission on the Future of Mature Industries: A Study of Public Governance," case study at Kennedy School of Government, unpublished (available from Samuel Leiken, director, Massachusetts Product Development Corporation.) This discussion is based on these publications, plus interviews with Timothy Bassett; George Carpenter, Massachusetts AFL-CIO; and former commission staff members Beth Siegel, Susan Friedman, and Tom Jones.)

18. Leiken, *op. cit.*

19. Internal memorandum from Massachusetts Executive Office of Labor.

20. "Report on the Activities of the Massachusetts Industrial Services Program," Industrial Services Program, Nov. 4, 1986, and ISP public relations office.

21. The discussion on the Economic Stabilization Trust and Business and Financial Services is based on interviews with William Currier, George Carpenter, Jack Clark (Executive Office of Labor), George Coughlin (current BFS director), Ge. Robert Friedman (former CEO of Savage Arms), and others; reports from the ISP office; Lucien Rhodes, "Against All Odds," *Inc.*, November 1986, pp. 102-108, and Evelyn Murphy, "Bay State Success Story: Helping Ailing Industries," *Boston Globe*, August 18, 1987, p. 28.

22. The discussion of the Cooperative Regional Industrial Laboratories program is based on interviews with Michael Schippani, Jack Clark, Beth Siegel, Michael Kane, (director of the Northern Tier Project), and William Schweke (of the Corporation for Enterprise Development).

23. *Economic Strength, Fiscal Stability: the Governor's Budget Recommendations for Fiscal Year 1986*, Commonwealth of Massachusetts, 1985, Vol. 1: Narrative, section titled "The Economy."

24. Botkin *et al.*; *op. cit.*, p. 135.

25. *Boston Globe*, Feb. 1, 1987, p. 1.

Chapter III: Pennsylvania

1. The statistics on Pennsylvania's economy are from several sources: *Choices for Pennsylvanians* (Technical Edition), Pennsylvania State Planning Board, Harrisburg, 1980; Garfield Schwartz Associates, Inc., "Challenges to Pennsylvania: An Overview of Economic Prospects," House Democratic Economic Studies Report, Vol. 1, No. 1, April, 1983; "Economic Revitalization in Pennsylvania

and Michigan," internal memo prepared by Thornburgh administration, Aug. 15, 1986; and interviews with Walter Plosila.

2. Walter Plosila, interview with author. For more detail on the Volkswagen deal see Peirce, Hagstrom and Steinbach, *op. cit.*, pp. 20-21.

3. Walter Plosila, interview with author.

4. *Ibid.*, and *Choices for Pennsylvanians: Status Report*, Governor's Office of Policy Development, Harrisburg, 1985, p. 3.

5. Roger Wheatley, interview with author.

6. These examples are drawn from the "Ben Franklin Partnership Challenge Grant Program for Technological Innovation 34 Month Progress Report," published by the Ben Franklin Partnership Board, March, 1986 – hereinafter referred to as the "34 Month Report."

7. The discussion of the challenge grant funding process draws on interviews with Roger Tellefsen, former executive director of the Ben Franklin Partnership, Walter Plosila, Rep. Tom Murphy, and others.

8. "Ben Franklin Partnership Challenge Grant Program For Technological Innovation 42 Month Progress Report," published by the Ben Franklin Partnership Board in December, 1986 – hereinafter referred to as the "42 Month Report."

9. Pennsylvania has the most extensive network of incubators: *National Business Incubation Association Review*, volume 1, issue 2, p. 1. Statistics on Ben Franklin Partnership investments in incubators: *ibid.*

10. Walter Plosila, interview with author.

11. William K. Stevens, "Economy Tops Pennsylvania Agenda," *New York Times*, January 21, 1987.

12. Quoted in Will Lepkowski, "Lehigh: One University's Approach to Rejuvenating U.S. Industry," *Chemical and Engineering News*, May 14, 1984, p. 40.

13. These examples are drawn from the "North East Tier Ben Franklin Advanced Technology Center Annual Report, 1984-1985."

14. All quotes from Peter Likins are from an interview with the author.

15. All quotes from Emory Zimmers are from interviews with the author. The information on the CIM Laboratory is also based on interviews with Douglas Sunday, a CIM Lab engineer.

16. All quotes from Alfred Austen are from interviews with the author.

17. All quotes from Ron Thomas are from interviews with the author.

18. Thomas Canfield, interview with author.

19. All quotes from Walter Plosila are from interviews with the author.

20. These statistics come from the "42 Month Report" and other Ben Franklin Partnership publications.

21. "48 Month Report," Ben Franklin Partnership.

22. Frederick Cusick, "A State Agency Takes Credit for Job- Creating Relocations," *Philadelphia Inquirer*, Nov. 25, 1984, p. B7.

23. Ivan Tylawsky, "Enterprise Development in Appalachian Pennsylvania," *The Entrepreneurial Economy*, (newsletter published by the Corporation for Enterprise Development in Washington, D.C.), September, 1984, pp. 5-6.

24. The discussion of Pennsylvania's Local Development Districts is based on interviews with Walter Plosila; Ivan Tylawsky; Harold Grossman, executive director of the Economic Development Council of Northeastern Pennsylvania (EDCNP); Dennis Robinson, Robert Hormel, and Jerome Bohinski of the SEDA Council of Governments (SEDA-COG); several business people who have dealt with LDDs; and publications by the Pennsylvania Commerce Department, EDCNP, and SEDA-COG.

25. The discussion of the MILRITE Council is based on interviews with Robert Coy, its former executive director; Walter Plosila; former Pennsylvania Revenue Commissioner James Scheiner; Julius Uehlein, president of the Pa. AFL-CIO; State Rep. Tom Murphy; others who have participated in MILRITE programs or events; and MILRITE Council publications.

26. Garfield-Schwartz Associates, *op. cit.*

27. Gov. Richard Thornburgh, interview with author.

28. For the Thornburgh administration's proposed changes, see the "Report to the Pennsylvania House of Representatives and the Pennsylvania Senate on Progress of Programs Funded by the Pennsylvania Economic Revitalization Fund and Administered by the Department of Commerce," Pennsylvania Department of Commerce, March 1, 1986. Not all of these recommendations passed.

29. The discussion of Pennsylvania's enterprise zones is based on interviews with Walter Plosila, George Werner, Rep. Alan Kukovich, Tom Cox, director of the Northside Community Development Council in Pittsburgh, and others; *Choices for Pennsylvanians: Status Report*, *op. cit.*, and newspaper articles.

30. "Economic Revitalization in Pennsylvania and Michigan," *op. cit.*

31. Richard L. Thornburgh, "State Strategies and Incentives for Economic Development," *The Journal of Law and Commerce*, Vol. 4, No. 1, p. 1.

Chapter IV: Michigan

1. Statistics on the Michigan economy are from "Economic Revitalization in Pennsylvania and Michigan," *op. cit.*; Charles Bartsch, ***Reaching for Recovery: New Economic Initiative In Michigan***, Northeast-Midwest Institute: The Center for Regional Policy, Washington, D.C., 1985; Task Force For a Long-Term Economic Strategy for Michigan, ***The Path To Prosperity***; and John E. Jackson, "Economic Development in Michigan: Choosing an Economic Future," a chapter of R. Scott Fosler, ed., *op. cit.* (forthcoming).

2. Statistics on population and per-capita income: Bartsch, *op. cit*; statistics on the state deficit are from interviews with Robert Bowman, state treasurer, and Robert Naftaly, chief budget officer.

3. Lou Glazer, interview with author.

4. Task Force for a Long-Term Economic Strategy for Michigan, *op. cit.*

5. Doug Ross, interview with author.

6. All quotes from Dwight Carlson are from an interview with the author.

7. Jackson, *op. cit.*, p. 12.

8. Dwight Carlson, Robert Bowman, interviews with author.

9. Ian Bund, interview with author.

10. All quotes from David Brophy are from an interview with the author.

11. All quotes from Robert Bowman are from interviews with the author.

12. Robert Williams, interview with author.

13. Sources for the discussion of the Strategic Fund include interviews with Peter Plastrik, Lou Glazer, Steve Rhode (a member of the Strategic Fund staff), Doug Ross, William Schweke, James Bassett (president of the Michigan Chamber of Commerce) and others, as well as on documents from the Strategic Fund.

14. All quotes from Peter Plastrik are from interviews with the author.

15. The discussion of Michigan's research institutions is based on interviews with Jerome Smith, Peter Plastrik, James Kenworthy (of the Strategic Fund staff), and others, Bartsch, *op. cit.*; documents provided by the Michigan Strategic Fund; and Marietta L. Baba and Stuart L. Hart, "Portrait of a New State Initiative in Industrial Innovation: Michigan's Industrial Technology Institute," in Denis O. Gray, Trudy Solomon and William Hetzner, eds., ***Technological Innovation***, North-Holland Press, Amsterdam, 1986.

16. All quotes form Jerome Smith are from an interview with the author.

17. Jack Russell, "On Base Modernization: The Contribution of a State-Sponsored Extension Service," Michigan Modernization Service, 1986, p. 1.

18. Jackson, *op. cit.*, p. 12.

19. Muriel Converse, Ann Thomas, and John Jackson, *Financing Small Manufacturers of Metalworking Machinery and Equipment*, Institute for Social Research, Ann Arbor, 1984; reported in Jackson, op. cit., p. 12.

20. The discussion of the Technology Deployment Service, the Technology Transfer Network, the Office of New Enterprise Services and Michigan Modernization Service is from interviews with Jack Russell, Peter Plastrik, James Kenworthy, and documents from TDS, TTN, ONES and MMS.

21. All quotes from Gov. James Blanchard are from an interview with the author.

22. The description of the Saturn proposal "Manufacturing Innovation Partnership: A Partnership, Not Just a Bid," Michigan's proposal to General Motors. This is an internal Blanchard administration document, which was not released to the press.

23. Jackson, *op. cit.*, p. 31.

Chapter V: Other States

1. For more information on state economic development programs, see *Revitalizing State Economies*, Washington, D.C., National Governors Association, 1986; Fosler, ed., *op. cit.* (forthcoming); and DeWitt John, National Governors Association, forthcoming.

2. Charles R. Warren, "Economic Development in Indiana: A Strategic Step." This is a chapter in Fosler, ed., *op. cit.* (forthcoming).

3. For a description of the banking legislation, see John M. Mutz and Belden H. Daniels, "Reregulating Indiana Banks to Stimulate Economic Development," *The Entrepreneurial Economy*, May, 1984, pp. 7-8.

4. Paul Ryder, testimony before the Intergovernmental Relations and Human Resources Subcommittee of the House Committee on Government Operations, *op. cit.*, pp. 317-328. See also publications from the Ohio Thomas Edison Program, and Sandra M. Slezak, "Thomas Alva Edison Partnership Program," The Entrepreneurial Economy, May, 1985, p. 10-11

5. Ted Kolderie and William A. Blazar, "A Quality Public Sector As A Strategy For Economic Growth," from Fosler, ed., *op. cit.*, (forthcoming).

Chapter VI: Lessons of the State Experience

1. For overall treatment of these programs, see David R. Jones, ed., *Building the New Economy: States in the Lead*, Washington, D.C., The Corporation for Enterprise Development, 1986, pp. 43-60; Gray, Solomon and Hetzner, eds., *op. cit.*; and Ted Lyman and Douglas Henton, *Promoting Advanced Technology Appropriate to a State's Economy: Beyond 'High Tech' Highways*, Menlo Park, Ca., SRI International, 1985.

2. *Technology and Growth: State Initiatives In Technological Innovation*, Washington, D.C., National Governors Association, 1985, p. 64.

3. For an overall view of this issue, see Hansen, *op. cit.*; Michael Kieschnick, *Venture Capital and Urban Development*, Washington, D.C., Council of State Planning Agencies, 1979; Lawrence Litvak and Belden Daniels, *Innovations in Development Finance*, Washington, D.C., Council of State Planning Agencies, 1979; Jones, ed., *op. cit.*, pp. 1-23; Corporation for Enterprise Development, "Transforming Dangers Into Opportunities: Strategies for Responding to Financial Deregulation," 1985; and James O. Gollub, *Financing Innovation in Enterprise: Beyond Venture Capital*, Menlo Park, Ca., SRI International, 1985.

4. David Birch, "Matters of Fact," (interview), *Inc.*, April 1985, p. 32.

5. Jacques Koppel, "Manufacturers Must Face the Music," *High Technology*, March 1986, p. 12.

6. For useful views of this issue, see Jones, ed., *op. cit., pp 24-42;* and Tom Chmura, *Investing in People: New Directions in Developing Human Capital To Meet the Needs of a Dynamic Economy*, Menlo Park, Ca., SRI International, 1985; and Pat Choate and J. K. Linger, *The High Flex Society*, New York, Alfred A. Knopf, 1986.

7. Choate and Linger, *op. cit.*

8. For useful examinations of this subject see Hugh O'Neill, *Creating Opportunity: Reducing Poverty Through Economic Development*, Washington, D.C., Council of State Planning Agencies, 1985; Jones, ed., *op. cit.*, pp. 124-173; *Investing in Poor Communities*, Washington, D.C., Corporation for Enterprise Development, 1985; Steve Quick and Robert Friedman, *The Safety Net as Ladder: Transfer Payments and Economic Development.*

9. For information on South Shore Bank see David Osborne, "Bootstrap Banking," *Inc.*, August 1987, p. 69-72, or contact South Shore Bank's management at 7054 S. Jeffrey Blvd., Chicago, IL, 60649. For information on Kentucky Highlands and the Delta Foundation see O'Neill, *op. cit.*, or publications from the National Congress For Community Economic Development, 1612 K Street, N.W., Suite 510, Washington, D.C., 20006.

10. For information on new housing programs, see Mary K. Nenno, *New Money and Mew Methods: A Catalog of State and Local Initiatives In Housing and Community Development – 1979-1986*, Washington, D.C., National Association of Housing and Redevelopment Officials, 1986; *Decent and Affordable Housing for All: A Challenge to the States*, Washington, D.C., National Governors' Association, 1986; and John Sidor, *State Housing Initiatives: A Compendium*, Washington, D.C., Council of State Community Affairs Agencies, 1986.

11. Jones, ed., *op. cit.*, p. 160.

12. *Ibid.*, p. 161.

13. Mt. Auburn Associates, *op. cit.*, p. 133.

14. For the closest things to overall texts on state economic development see, in addition to other publications cited in these notes, Robert Friedman and William Schweke, eds., *Expanding the Opportunity To Produce: Revitalizing the American Economy Through New Enterprise Development*, Washington, D.C., The Corporation for Enterprise Development, 1981; Vaughan, *et al.*, *op. cit.* and Peirce, Hagstrom and Steinbach, *op. cit.*

15. See Jane Jacobs, *The Economy of Cities*, New York, Vintage Books, 1969, and *Cities and the Wealth of Nations*, New York, Vintage Books, 1985.

16. "Opportunity for Every American," Democratic Policy Commission, Report of the Committee on the Industrial and Entrepreneurial Economy, 1986.

17. Thurow, *op. cit.*, p. 161.

18. Susan Friedman and S. M. Miller, "The Reconstruction of Finance: Implications of Industrial Policy," in Alan Gartner, Colin Greer and Frank Riessman, *Beyond Reagan: Alternatives for the '80s*, New York, Harper & Row, 1984.

19. *Ibid.*

20. Kieschnick, *op. cit.*, p. 51.

21. *Politics and Markets*, newsletter of the Gallatin Institute, Nov. 28, 1983.

22. Thurow, *op. cit.*, p. 18.

23. Robert B. Reich, Interview, *World Policy Journal*, Fall, 1984, p. 16.

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